Medical Lib. NOV 15 1927

Illinois Medical Journal

OWNED AND PUBLISHED BY THE MEDICAL PROFESSION OF ILLINOIS

Office of Publication 155 N. Ridgeland Ave., Oak Park, Illinois

Vol. LII, No. 5 OAK PARK, ILL., NOVEMBER, 1927 $3.00 a Year

CONTENTS

Editorials (For Titles See Extended Table of Contents) 345

ORIGINAL ARTICLES

Public Health Activities of the Medical Society of the State of New York. *James E. Sadlier, M. D., Poughkeepsie, N. Y.* 359

The Diagnosis and Treatment of Bladder Tumors. *B. C. Corbus, M. D., Chicago* 365

Results in the Treatment of Cancer of the Bladder. *Vincent J. O'Conor, M. D., Chicago* 369

Phrenectomy. *Ralph Boerne Bettman, M. D., Chicago* .. 374

The Healing of Peptic Ulcer. *Karl L. Thorsgaard, M. D., Chicago* 377

Subtotal Resection of Tibia Replaced by Fibula. *John R. Harger, M. D., Chicago* 381

Conservative Treatment of Hemorrhoids. *William A. Hinckle, M. D., Peoria, Ill.* 387

Exostoses of the Bones of the Foot. *Aimé Paul Heineck, M. D., Chicago* 388

Muscle-Strain and Pneumococcus Cellulitis. *Oscar W. Tulisalo, M. D., Rockford, Ill.* 392

Studies on Parathormone, Pathological Part. *Wilhelm C. Hueper, M. D., Chicago* 393

Neuroinidia, *J. Henry Dowd, M. D., Buffalo, N. Y.* 396

Surgery in Budapest, Hungary. *Marcus H. Hobart, M. D., Evanston, Ill.* 399

Continued on Page 14

SEVENTY-EIGHTH ANNUAL MEETING, CHICAGO, MAY 8, 9, 10, 11, 1928

Entered as Second-Class Matter July 21, 1919, at the Post Office, Oak Park, Illinois, under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1102, Act of October 3, 1917, authorized July 15, 1918.

MILWAUKEE SANITARIUM

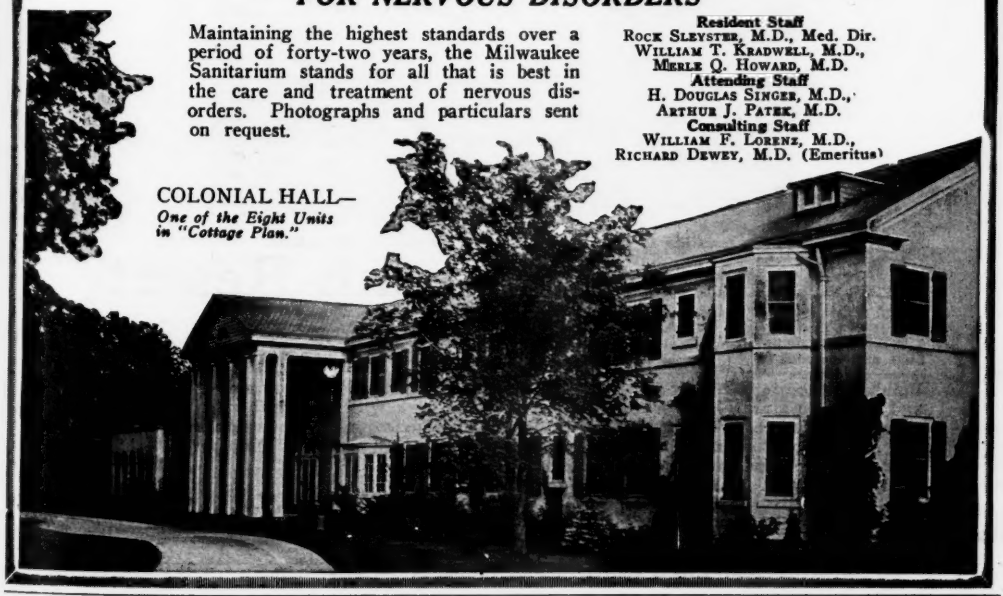
Wauwatosa, Wisconsin (Chicago Office—1823 Marshall Field Annex. Wednesdays, 1-3 P. M.)

FOR NERVOUS DISORDERS

Maintaining the highest standards over a period of forty-two years, the Milwaukee Sanitarium stands for all that is best in the care and treatment of nervous disorders. Photographs and particulars sent on request.

Resident Staff
ROCK SLEYSTER, M.D., Med. Dir.
WILLIAM T. KRADWELL, M.D.,
MERLE Q. HOWARD, M.D.
Attending Staff
H. DOUGLAS SINGER, M.D.,
ARTHUR J. PATEK, M.D.
Consulting Staff
WILLIAM F. LORENZ, M.D.,
RICHARD DEWEY, M.D. (Emeritus)

COLONIAL HALL—
One of the Eight Units in "Cottage Plan."



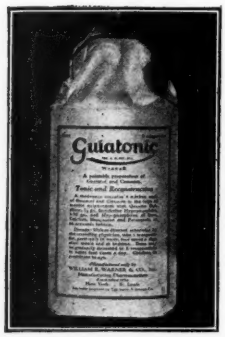
"The Advertising Pages have a *Service Value* for the READER that no *truly Progressive Physician can afford to overlook."*

"In the Twilight Zone"

that borderland *between health and disease*, where as yet no pathological lesion exists, but where there is a very evident metabolic dysfunction, attended by cachectic or anemic conditions, loss of weight, lack of energy, and so on,

the foremost requirement is a restorative agent that will stimulate all the natural physiological processes of the economy, rather than merely increase the activity of one or two functions which may or may not be needed.

At such times and in such cases experience has proved the efficiency and relative superiority of



A palatable preparation of special salts of guaiacol and creosote which may be freely given to the weakest patient, without fear of gastric disturbance. *It contains no narcotics.*

Indicated in all depressed or debilitated conditions, or whenever a tonic is required.

Guiatonic

A generous trial quantity free upon request. William R. Warner & Company, Inc., Manufacturing Pharmaceutists since 1856. 113-123 West 18th Street, New York City

On main line C. M. & St. P. Ry., 30 miles west of Milwaukee.

Oconomowoc Health Resort

OCONOMOWOC, WISCONSIN

Built and equipped in 1907 for the specific purpose of treating NERVOUS and MILD MENTAL DISEASES

Building absolutely **Fireproof.** Non-institutional in appearance, accommodations modern and homelike atmosphere prevails. Sixty acres of park with beautiful views over lakes. Every essential for treating nervous cases provided, including extensive baths and separate occupational departments under supervision of trained teachers. Number of patients limited assuring personal attention from the staff.

ARTHUR W. ROGERS, M.D., Physician in Charge
JAMES C. HASSALL, M.D., Medical Supt. FRED. GESSNER, M.D., Asst. Physician

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF

THE ILLINOIS STATE MEDICAL SOCIETY

VOL. LII | OAK PARK, ILL., NOVEMBER, 1927 | No. 5

ILLINOIS MEDICAL JOURNAL

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

GENERAL OFFICERS, 1926-1927

PRESIDENT .....G. HENRY MUNDT, Chicago
PRESIDENT-ELECT.....JOHN E. TUITE, Rockford
FIRST VICE-PRESIDENT.....A. T. LEIPOLD, Moline
SECOND VICE-PRESIDENT.....A. G. BOSLER, Chicago
TREASURER.....A. J. MARKLEY, Belvidere
SECRETARY.....HAROLD M. CAMP, Monmouth

THE COUNCIL

D. B. Penniman,	1st District, Rockford	1929
E. E. Perisho,	2nd District, Streator	1929
S. J. McNeill,	3rd District, Chicago	1929
J. S. Nagel,	3rd District, Chicago	1928
R. R. Ferguson,	3rd District, Chicago	1930
Wm. D. Chapman,	4th District, Silvis	1928
S. E. Munson,	5th District, Springfield	1928
Chas. D. Center,	6th District, Quincy	1930
I. H. Neece,	7th District, Decatur	1928
Cleaves Bennett,	8th District, Champaign	1929
Andy Hall,	9th District, Mt. Vernon	1930
J. S. Templeton,	10th District, Pinckneyville	1930

EDITOR

CHARLES J. WHALEN.....25 E. Washington St., Chicago

GENERAL COUNSEL

ROBERT J. FOLONIE.....231 S. La Salle St., Chicago

PUBLICATION COMMITTEE

J. W. VAN DERSLICE, *Secretary*.....155 N. Ridgland Ave., Oak Park

MEDICO-LEGAL COMMITTEE

J. R. BALLINGER, *Chairman*..2724 West North Avenue, Chicago
GEORGE H. WEBER, *Secretary*.....Peoria

EDUCATION COMMITTEE

MISS JEAN MCARTHUR, *Secretary*
185 N. Wabash Avenue, Chicago

SCIENTIFIC SERVICE COMMITTEE

JAMES H. HUTTON, *Chairman*, 6056 Cottage Grove Ave., Chicago
HAROLD M. CAMP, *Secretary*.....Monmouth

State Society will pay no bills for legal services except those contracted by the Committee. Notify the Chairman at once. Do not employ attorneys.

Send original articles, advertising copy, cuts and all communications relating to advertising to Dr. Charles J. Whalen, c/o Illinois Medical Journal, 185 N. Wabash Ave., Chicago.

Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 1618 Juneway Terrace, Chicago.

Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

Subscription price of this Journal to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $3.50 per year for all foreign countries included in the postal union. Canada, $3.25. Single current copies, 50 cents.

Editorial

WE SHOULD NOT LAY STRESS ON PARALYSIS IN POLIOMYELITIS.

There has been considerable increase in the number of cases over the country of poliomyelitis in recent months. Many doctors are under the impression that we do not have poliomyelitis without paralysis. The reverse is probably true and that the vast number of cases of anterior poliomyelitis never reached the paralytic stage.

Because of the prevalence of the disease at present it may not be amiss to urge that physicians should be on the watch out for acute poliomyelitis.

At present this is recognized as an acute, infectious, systemic disease, with or without paralysis.

Though it is believed that insects play an important part in transmission of poliomyelitis, practically a clean bill of health is granted farm animals. It is, however, capable of being carried by human beings, though less infectious than scarlet fever and diphtheria, and isolation is a large factor in its control. Paralysis, although not characteristic, may be present. Only in a minimum of cases where paralysis exists at time of diagnosis is there a subsequent increase of the paralytic state.

Refreshing the memory as to symptoms and tendencies it may be stated here in a general fashion that poliomyelitis has all the earmarks of an acute infection but no standardized or routine points of attack. Poliomyelitis should never for an instant be forgotten when an acute infection is present. This disease presents many faces to the physician. Inflammation and involvments may be slight, individual or combined, according to the section or the entirety of the cord that is attacked. For example, several nuclei, a part of one nucleus or one entire anterior horn may be affected. Also to be looked for are meningeal symptoms, simulations of Landry's paralysis, or bulbar paralysis, or gastro-intestinal

manifestations. In diagnosis it is well to remember the importance of deep reflexes; the painful effect of palpation of the muscles or of tenderness on stretching and the almost constant evidence of leucopenia, at the outset. If there is any doubt at all spinal puncture should be made.

The greatest possible benefit in this disease is brought about by the early recognition and complete isolation in order to prevent the spread of the disease to others.

HONORING PAST PRESIDENTS ILLINOIS STATE MEDICAL SOCIETY

Past presidents of the Illinois State Medical Society have now among their documentary credentials a certificate of their service. This fortuitous custom was inaugurated at the 1927 meeting in Moline, Ill. During the ceremonies of "Past President's night" the innovation became a portion of the ritual of each convention.

To those members of the state society who were unable to attend the 1927 state convention a reproduction of the certificate may be of interest.

Of the seventy-six past presidents of the society nineteen are living. Of this number six were unable to go to Moline and their certificates were mailed. Presentation in person was made to the thirteen there, by Dr. W. D. Chapman, chairman of the council of the state society. The idea of the certificates came from Dr. Harold M. Camp, secretary of the Illinois State Medical Society.

Illinois State Medical Society
Illinois State Medical Society
ORGANIZED A.D. 1850
To all to whom these Presents may come, Greeting:
This is to Certify that _____ has held the office of President of the Illinois State Medical Society From _____ to _____ during which period he performed the duties of that office efficiently, faithfully and impartially and with entire satisfaction to the members of this Society
Therefore, as a recognition of his efficient and loyal service to this Society and his devotion to the advancement of medical science and the art of medical practice, we, the officers of this Society, pursuant to a vote of its members, hereby confer upon him this
Certificate of Appreciation
with all the Honor and Benefits thereto appertaining.
In Witness Whereof our signatures are hereunto affixed this _____ day of _____ 19__
President
Secretary
Chairman of the Council

THE PRINCIPLE THAT SUSTAINS COMPULSORY VACCINATION IS BROAD ENOUGH TO COVER CUTTING THE FALLOPIAN TUBES.

The question of sterilization of the feebleminded is always with us. In May, 1927, the

United States Supreme Court handed down a decision upholding the decision of the Virginia Court of Appeals and a local circuit court in their decision approving the order to perform a salpingectomy on a feeble-minded woman who was the daughter of a feeble-minded mother and the mother of a feeble-minded illegitimate child. Mr. Justice Holmes read the opinion. We quote from the opinion as follows: "We have seen more than once that the public welfare may call upon the best citizens for their lives. It would be strange if it could not call upon those who already sap the strength of the state for these lesser sacrifices, often not felt to be such by those concerned, in order to prevent our being swamped with incompetents. It is better for all the world if, instead of waiting to execute degenerate offspring for crime or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind. The principle that sustains compulsory vaccination is broad enough to cover cutting the fallopian tubes."

MEDICAL SERVICE WILL BE DESTROYED BY LAY-SPONSORED LAWS. ACKNOWLEDGEMENT OF THIS AND MEDICINE'S DIAGNOSIS OF LEGAL SITUATION JUSTIFIED AT LAST IN EYES OF BUSINESS MEN.

Those 93,000 New Laws Placed on Statute Books in Year 1926 Suffocating Dose for Sane Men to Swallow

That the redundancy of laws now breaking the backs of the statute books of the land are a general affliction is becoming evident to thousands who have supposed that much of the protest against bureaucracy came from those caught in the net of class legislation. The medical profession has known this for a long time, just as from the first medicine has been a continuous and heavy sufferer from fool legislation.

"Buck-passing" has become an epidemic disease among Americans. Instead of following out the democratic principle of conservation of personal rights and scientific accuracy through due respect of the rights of others and of the wisdom of scientists the country seems to have gone mad on the path of conservation of personal rights at the expense of those of everybody else, and the indulgence of nose-thumbing at science. "Make a law" stands out as the easiest way of getting maximum results with minimum effort.

As a matter of fact this indiscriminate making of laws by everybody everywhere is about as efficacious a panacea as most panaceas are.

Black magic of the Middle Ages appears to be hoped for today by the cabalistic writings upon the law books of the land. "Cabalistic" is right. There are now so many laws, each, and all capable of the myriad interpretations with which a savant or a knave is capable of twisting from legal phraseology, that few sane folk, if any, can possibly tell "what it is all about."

For example, during the year 1926 no less than 93,000 new laws were introduced into the country. The principle of democracy is the fewest laws for the most persons, with the idea that self-respect will be the dominant governing factor.

It may be true that the number of morons is increasing daily. If the laws that gall and chafe were made by the superior portion of the population perhaps these laws would be corrective. Unfortunately this is not the case. What proportion of the "superior portion" sits in state and makes the laws? Perhaps "there ought to be a law" to tell.

Merle Thorpe, editor of *The Nation's Business,* dealt with this situation in a recent issue of *Collier's Magazine*:

"National addiction to patent medicines for bodily ills, perhaps makes it but natural that as a people we should have a panacea for all economic ills also: it is, 'Please pass a law.' We expect the Federal Government to perform economic miracles (and to a lesser extent) the state capitols seem to dazzle with supernatural powers; we invest our lawmakers with haloes, 'supermen' who with a mere waving of hands can fix anything and everything." This is all quite in line with what the editor of the Illinois Medical Journal has been fighting for during the last twenty years.

Further, Mr. Thorpe states: "The President of the United States has said that 'laws are discovered, not made.' We agree to this in every science except economics. We go to the laboratory to discover the natural laws affecting biology, chemistry and physics. But if it is an economic question, we simply—'make a law.' There are a lot of laymen who think making a law will cure the sick and raise the dead.

"Things wouldn't be so bad if we occasionally

repealed a law! But laws are seldom repealed in the United States. I know of only one, and that was repealed by a state legislature last February—a law which was passed twenty years ago providing that anyone driving a horseless carriage must stop when approaching a village and telephone ahead so that people could get ready to hold their horses.

"It has been suggested that one way out of out present dilemma would be to pass a law requiring that every new piece of legislation carry with it the repeal of some other law. A good idea, but you will note that the panacea is, as usual, 'There ought to be a law!'

"Which points out not the least of the reasons why we suffer from a plague of laws: as a people we are too inclined to joke about our own political and business habits and shortcomings, too ready to settle grave issue offhand. We can't see beyond your own economic noses.

"After twenty years' contact with state legislatures and Washington, I am prepared to say that the desire for more laws does not originate with the legislators themselves. *The pressure comes from us, their constituents.*

"Many a congressman introduces a bill to satisfy the well-meaning if ill-advised wishes of the men and women to whom he was responsible.

"I am starting a new organization. It will have no by-laws, no constitution, no officers, no meetings, no dues, no annual conventions. It will be 'Fewer Laws Club.'

"We are all agreed that there are too many laws, but I'll venture that each reader of Collier's knows at least one law which should be passed.

"The women of the land, now that they have been given the suffrage, have not made matters any better. In fact, their enthusiasm seems to have added fuel to the flames. Governor McMullen of Nebraska told me the other day of a Nebraska boy who left the old home town twenty years ago to make his fortune in the East. He returned this summer. He went to a church social. His memory recalled the days when the men lined up on one side of the church and the women on the other. The men talked politics, while the women discussed the canning of fruits.

"The men still lined up on one side of the church and the women on the other. But he heard the women talking of passing laws, of amending the Constitution; while from the other side of the church he heard from one of the men something like this:

"Remember now! You have got to boil it three hours, and don't forget the yeast!"

NEXT ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY

May 8 to May 11, 1928
New Stevens Hotel
Chicago

The seventy-eighth annual meeting of the Illinois State Medical Society will be held in Chicago, May 8 to 11, 1928, in the new Stevens Hotel, which is the largest hotel in the world. On account of the character of the conference next year, it is thought advisable to extend the time to four days instead of three days.

By advancing the date one week, to May 8, there will elapse one month before the meeting of the American Medical Association in Minneapolis.

As a combination clinical and scientific session, clinics will be held at the new medical units of the University of Chicago, of Northwestern University, and of the University of Illinois, and at the Cook County Hospital. All scientific and general programs will be at the Stevens Hotel.

Exhibits will be at the hotel, including many scientific displays and demonstrations, as attractive features.

Dr. Nathan S. Davis III has been selected as general chairman of the committee on arrangements. He has a group of men on various committees who are laboring to secure unusual results. Invitations will be sent to the physicians of states adjoining Illinois, such as Michigan, Wisconsin, Iowa, Missouri and Indiana, all adjacent to Illinois, and this insures a record-breaking attendance. General hospital clinics will be arranged for both Monday, May 7 and Saturday, May 12, and during the session for a full week of clinics.

Officers of the five sections are anxious to get in touch immediately with members from both the Chicago Medical Society and the downstate societies who desire to read papers at the meeting.

Section Officers for the Convention are:

Medicine:

J. L. Sherrick, Chairman, Monmouth, Illinois.

N. S. Davis III, Secretary, 952 North Michigan Blvd., Chicago.

Surgery:

J. R. Harger, Chairman, 25 East Washington St., Chicago.

Earl D. Wise, Secretary, Champaign, Illinois.

Eye, Ear, Nose and Throat:

C. F. Yerger, Chairman, 4458 West Madison Street, Chicago.

Walter Stevenson, Secretary, Quincy, Illinois.

Public Health and Hygiene:

A. A. Crooks, Chairman, Peoria, Illinois.

E. W. Mosley, Secretary, 3325 Lincoln Avenue, Chicago.

Radiology:

Harold Swanberg, Chairman, Quincy, Illinois.

E. G. C. Williams, Secretary, Danville.

Early issues of the JOURNAL will detail the program for what will undoubtedly be a record maker in the history of State Society meetings.

A FEW FACTS ABOUT THE STEVENS HOTEL

The Stevens Hotel, which will be convention headquarters of the Illinois State Medical Society, May 7-11, 1928, is the world's largest and greatest hotel, occupying the entire block on Michigan Boulevard between Seventh and Eighth Streets; the hotel overlooks Grant Park and Lake Michigan, representing an investment of $27,000,000 in ground, structures and surroundings. There are 3,000 rooms each with bath, circulating ice water, closet, outside light and air.

The Stevens rises twenty-five stories above the ground with a four-story tower above and five basement levels below. Four entire floors are given over to public use and service. These contain dining rooms, restaurants, lobbies, lounge rooms, ball rooms and shops. The Stevens claims the largest and most beautiful ball room in the world, equipped with motion picture screen and every facility for dinners, meetings, dances and spectacles, including a theatrical dimmer board by which every conceivable lighting effect with use of colors can be produced. There are seven ball rooms in The Stevens Hotel and nine private dining rooms with seating capacity from twenty-five to one hundred in each. There are one hundred rooms on the fourth floor which can be used for committee meetings or displays and which range in seating capacity from twenty-five to one hundred fifty.

During the first month of its operation a banquet was served to 4,700 people at one seating in record time. The power plant of The Stevens is the largest privately owned untility of its kind in the world and is equipped with generators capable of producing 3,200 electrical horsepower —sufficient for the industrial and domestic needs of a community of 60,000 people.

The Stevens has the world's largest check room with accommodations for 3,200 guests in addition to restaurant and various floor check rooms which furnish accommodations for several thousand more.

The house surgeon has a completely equipped two-ward hospital and operating room.

The Stevens has its own ice cream factory, its own laundries, its own candy factory, printing establishment and power plant. And also, it has a circulating library of 25,000 volumes.

The site alone cost $6,000,000.

The carpets cost $600,000.

Sixty carloads of mattresses are used in the hotel and four carloads of glassware.

The silverware filled three freight cars, the hollowware alone weighing 43,576 pounds.

A 101-foot reservoir stores water for bathing and drinking purposes.

From the roof garden promenade one can see the cliffs and dunes of Michigan.

The lounge is carpeted with the three largest Saruk rugs in all the world, and is furnished at a cost of more than $200,000.

The grand ballroom can seat 4,000 guests.

An army of 2,500 employes is necessary to keep up the service.

Fourteen passenger elevators will carry an aggregate of 224 guests at a time.

The telephone switchboard system is capable of receiving and transmitting calls sufficient for a city of 15,000.

The refrigerating plant has a capacity of 300 tons of ice daily.

The ice cream factory can produce 120 gallons of ice cream an hour, while the candy factory can satisfy the appetites of 15,000 small boys.

The laundry, operated on a weekly schedule, could care for the wants of a community of 60,000 people.

PROGRESS OF EDUCATIONAL COMMITTEE

The Educational Committee are preparing an exhibit of health posters which can be sent out to organizations for use in connection with special health programs. The posters have been secured through the courtesy of various organizations in the country and represent the best health material available, for display purposes.

News articles pertaining to health and the school child have been released to one paper in each county to be used November 7, which day was designated as "Health Day" during American Education Week. The services of the Speakers' Bureau have also been offered to the superintendents of the Chicago high schools for this day.

Calls for speakers are increasing. A series of eight lectures on topics concerning health have been arranged for one men's organization in Chicago. These lectures began October 25 and will continue until the first of December.

The office of the Educational Committee has taken care of the news articles for three important medical meetings in October and November.

ETHICS OF MEDICAL NEWSPAPER WRITING

Dr. Charles A. L. Reed was president of the American Medical Association at the time of its reorganization. He, later, was on the committee that formulated its "Principles of Ethics." He is now devoting himself exclusively to literary work, his last book, "The First Estate," just from the Stratford press, being a novel with a scientific motif. But, in addition to writing books, he writes an article on health and success every day for the King Features Syndicate, New York, which, in turn, furnishes the series for simultaneous publication in many newspapers of the United States, Canada, and foreign countries. Dr. Reed's views on the ethics involved in his newspaper work are, therefore, of interest. In a recent interview he said:

"No, I have not 'retired.' I am now practicing 'educational medicine.' I am 'carrying the message to the masses,' as it were. It is true my articles are having a phenomenal run. This, in large part, is due to the influence of the medical profession. You see, I had long wanted to do just what I am now doing. The opportunity came to me unexpected. I saw, however, that newspaper writing could not be ethically combinded with a fee-earning practice. Each was entirely ethical within itself but the two wouldn't mix. The combination spelled 'advertising" with the worst form of unfair competition. My practice at the time was distinctly national. But, without hesitation, I announced to the entire medical profession that I would accept no more patients—and I haven't. Now, in spite of the fact that I have never published my home address in my articles—another fine ethical point—I do receive through my many newspaper offices literally hundreds of letters asking for treatment. In no single instance have I ever given it. The experience, however, shows what I mean by 'unfair competition.' On the other hand I have used my articles, now numbering well on to two thousand, to create a higher appreciation of the medical profession by the general public—a better understanding between the two. This is a thing that I have been and am doing much more effectively, so far as publicity methods are concerned, than the profession in any locality can do in its own behalf. It is doubtless in recognition of this fact that, as I know to have been true in many instances, my professional colleagues have asked editors to put on my feature and have thus helped to extend my circulation and influence."

EXCESSIVE DRUG ADDICTION OF PANEL PATIENTS IN ENGLAND—ANOTHER CURSE DEVELOPED OUT OF SOCIALIZED MEDICINE

The A. M. A. Paris correspondent, under date of Sept. 6, 1927, sends the following which is highly instructive as showing another of the previous known forty-seven varieties of this socialistic act:

EXCESSIVE DRUG ADDICTION OF PANEL PATIENTS

It is estimated that panel prescriptions to the number of 47 million are dispensed annually and that the drugs and appliances cost $10,000,000. The regulations having failed to check this colossal expenditure, the minister of health has, evidently in despair, made an extraordinary agreement with the pharmacists. They will "collectively accept liability for the provision of all

the drugs and appliances prescribed for insured persons and in return receive the maximum amount available for the purpose." The agreement is to run for six years, subject to the right of the pharmacists to ask for revision in certain contingencies. The minister has undertaken that the annual sum available shall not be less than 66 cents for each insured person. He has also undertaken to adopt every practical means with a view to checking unnecessary prescribing. Once more the inevitable weakness of socialism is shown. Those concerned in the expenditure of this colossal sum on drugs have no effective interest in economy. The insured can be drugged to their hearts' content without expending a cent, and the English working classes have a pathetic faith in drugs. The late Sir Frederick Treves said that "the craving for bottles of medicine in this country was only second to the craving for drink." The only check on this craving is the refusal of the physicians to prescribe. But they have no interest in economy beyond the small one of being taxpayers, which is much more than counterbalanced by the desire to avoid unpopularity and loss by the transference of the patients to other lists. But the new system, devised to avoid one evil, introduces others and apparently greater ones. The pharmacists gamble on the amount of prescribing. They get the last cent of the available sum. If overpaid, they pocket the gain. If underpaid or even if they bother the government by putting up a case, they may get more. "Heads I win, tails you lose." Moreover, as the *British Medical Journal* points out, it is to the financial advantage of pharmacists that the quantity and quality of drugs supplied shall be as small and as inferior as possible and there may be a temptation for the ministry to bring undue pressure to bear on panel physicians to restrain the amount and nature of their prescribing. Curiously, a fact which seems to have been forgotten, it was this very objection that physicians (who in this country usually dispense their own medicines) would economize at the expense of patients that causes Mr. Lloyd George in drafting the insurance act to take dispensing out of the physicians' hands and hand it over to the pharmacists. So much for the attempt of the most astute politician of the day to avoid, but only in one small respect, the evils of his socialistic act.

DR. CHARLES D. CENTER WRITES A BOOK SAYING PART OF WHAT SHOULD BE SAID ABOUT "THINGS USUALLY LEFT UNSAID"

A Subjective Brochure About the Great War and the Personal Experiences of Col. Charles D. Center, M.D.

Food for thought and a fillip of inspiration are contained in a curiously apt human document treating of the Great War and written by Charles D. Center, M. D., F. A. C. S., of Quincy, Ill.

Dr. Center saw service in the thick of the fight in which the famous Thirty-third Division helped to win the war." As Colonel in command of the 130th Infantry Regiment, and later commanding trains and military police, Dr. Center's duties varied picturesquely and pertinently from keeping up the morale of his men to seeing that the roads were clear for transport. He has given a lucid,—almost surgically clean,—account of his personal work in the conflict from Quincy to Luxemburg via Texas and the Meuse and the mud.

This book might well be called "A slice of the life of a patriot and citizen of America." For while there were undoubtedly very few men of science who laid aside the specific prerogatives of their various professions to go to the war as men only, the story of Dr. Center and the war,—that of an individual doing his best for right, and right only—is duplicated probably by tens of thousands among men who wore the khaki side by side with the doctor. This book is of protein value because, while it appears in the modest dress of the home town printer, and is declared frankly to have been written for "family record" only, the volume affords a balanced bird's eye view of many angles of the war. For those who desire to be seeped in detailed atrocities or "Army scandals," this book of Dr. Center's will seem a "dud," albeit the document owns all the inherent qualities of dormant explosives accredited such temperamental shells. More than one rap at things as they were is taken deftly by soldier and surgeon.

"He who runs may read." More than one member of the A. E. F. will chuckle reminiscently at certain cited disciplinary systems at which Colonel Center takes a good hard rap.

Perhaps the finest part about the book is the unwitting delineation of the author's own hero-

ism contingent upon his personal life, both in the wife and three sons—two of them practically infants whom he left at home, and for the fourth son, a boy hardly old enough to be in the army and yet who was there. As a tribute to the class of men turned into soldiers by the Illinois National Guard the book merits the Order of the Palm. The I. N. G. needs no brief for accomplishments in France. When it is remembered that it was in the "home guards" first that Dr. Center drilled, that in 1905 he was assistant surgeon medical corps, Fifth Illinois Infantry, and that it was love of the game as he knew it in those surroundings that sent him into the contingent that took him to France, the book he has written is another decoration for the "Thirty-third."

There is much psychology that is good for peace as well as for war in the reprints of the letters Dr. Center had written home to various organizations—the Consistory, the Rotary and other clubs. And there is much insight and no little humor and philosophy in that comparison the colonel makes of soldiers from various nationalities—the Australian, British, Scotch, Canadian, French, and American. Col. Center writes, saying of the Americans, "They are the bonniest fighters that the world has ever seen, and the anxious families at home, who may now, or who may in the future be sorrowing over the death of one of these fighting men, may hold their heads high with pride, that *one of theirs* was *one of the best the world has known,* in this the greatest war of all history."

Dr. Center deplores the movement of troops on Nov. 10, 1918, as unnecessary in his opinion and states that "American lives lost that morning were needlessly sacrificed. . . . Because of a blunder, or a mistaken idea, or to make a showing, or some other indefensible reason—into the mud and marsh of the Valley of the Woevre marched the foot troops of the Thirty-third Division that morning of November 11 to make a Roman holiday for someone."

There is real humor in the way the Colonel and a "caterpillar" cleared a trafficked road. More of the same is to be found in the tale of the sharpshooters and the bottles. Of course, in this the Colonel won. As William Hodge would say, "Don't they always?" Anybody who has ever bought, sold, or handled a government mule will laugh with a pitying thought for the poor Luxemburger and his purchase at the animal auction.

There is much human interest in the account of the meeting with the King of England, and even more, though of a different sort, in the reference to the "hardening" and consequent loss of horses and mules. Nor can one read without enjoyment anecdotes of the boyhood of the colonel on an Illinois pioneer's farm, his struggles for an education, and even his two youthful poems from "The Corpuscle," an early student publication at Rush Medical College, of which Dr. Center was an editor.

Let it be repeated. Psychology and philosophy of the book are as sustaining as its direct citations. Though printed privately, the book merits and probably will have a wide circulation. A most excellent likeness of Col. Center is the volume's frontispiece.

The book sells at $2.50.

INSTRUCTIONS TO CONTRIBUTORS OF PAPERS FOR PUBLICATION IN THE JOURNAL

It is expressly understood that articles contributed to the ILLINOIS MEDICAL JOURNAL have not been and, if accepted, will not be offered to another journal for prior or simultaneous publication; no objection can be raised for the subsequent reproduction of any of them. Although it is believed that reprinting or simultaneous reproduction of papers in readily accessible journals in a given field is professionally unnecessary, bibliographically undesirable and economically wasteful, however, if a contributor has a paper printed elsewhere subsequently to its appearance in the ILLINOIS MEDICAL JOURNAL (excepting a volume of society transactions), due credit shall be given for original publication. The editor relies upon all contributors to conform to this rule.

Manuscripts should be typewritten, double spaced, and only clear verified copies presented. The name and address of the author should appear under title of the paper. The name of the society before which presented, as well as the date of address, should appear as a foot-note. Literature cited should be assembled at the end of a manuscript in numerical order and should be numbered serially. These bibliographic items in the list should be referred to in the text by

numerals in parentheses corresponding with the sequence numerals in the list. Each item in this reference list should consist (in this order) of the (a) numeral indicating its sequence in the list, (b) name of the author, (c) year of publication, (d) exact title of the paper (or book) referred to, (e) full title of the periodical containing the paper, (f) volume numeral for that periodical, and (g) numeral for the first page (or page specially cited) of the paper.

All illustrations should be submitted in such forms as to admit of photographic reproduction without retouching or redrawing. Marginal letters cannot always be set in type and should, therefore, be written in India ink and regarded as parts of the original illustrations; or, in doubtful cases, the marginal lettering may be inserted temporarily, with lead pencil, for suitable attention by the editor. Unless specific instructions are given by authors, the printer will be requested to determine the degree of reduction that may most suitably be applied in illustration. Reproduction of illustrations can be effected most satisfactorily, as a rule, when the originals are large enough to permit of considerable reduction in the plates prepared from them.

RELIEVING THE MONOTONY OF LIVER DIET

Liver Diet in Anemia

While liver seems to be presenting increasing evidence of its value in the treatment of anemia, physicians everywhere are finding it difficult to keep patients contented and happy while they are taking it. One patient who was told that she must continue indefinitely to consume about a pound of liver daily, said: "Doctor, it can't be done. I can't even take liver every day, and certainly not for every meal." This state of affairs is due partly to the fact that few people can cook liver in any other way than by frying, and the following recipes are presented in the hope of alleviating this truly monotonous and not very appetizing dietary.

The recipes are taken from English and French sources, as in these countries liver is a much more popular article of food than it is in the United States.

FRENCH WAYS OF COOKING LIVER

1 pound of liver
1 slice of bread *grated*—this means grated, not crumbled
1 tablespoonful of chopped parsley
½ teaspoonful of salt
¼ teaspoonful of pepper
A very thin slice of ham

Wash the liver well and cut into thin slices; put into casserole; sprinkle the bread crumbs over it, then the parsley, pepper and salt. Cut the ham into strips and lay it on top, then pour in one teacupful of cold water. Bake in oven for half an hour.

Another French recipe is as follows:

1 pound of calf's liver
3 tablespoonfuls of grated bread crumbs
4 large mushrooms, chopped
1 medium-sized onion finely chopped
2 sprigs of parsley finely chopped
½ teaspoonful of salt and a pinch of pepper

Cut the liver into slices half an inch thick, and sprinkle each slice with the mixture of bread crumbs, mushrooms and seasonings; put in a casserole, pour over it one-half pint of cold water or good soup stock, and bake in a slow oven for three-quarters of an hour.

LIVER MOLDS

This is an English recipe:

Take 1 pound of liver, boil it and grate it with three strips of bacon. Mix it with about one-fourth of the amount of bread crumbs, the yolks of two eggs and seasoning to taste. Steam in buttered molds.

LARDED LIVER

This recipe is taken from a Scottish cook-book:

Take a lamb's liver and lard it in rather close rows, covering the whole upper surface. Place it in a deep casserole with chopped onions, carrots, slices of fat bacon, salt, pepper, and sweet herbs (sage, etc.). Cover with water or a good soup stock. Cook in a moderate oven for forty or fifty minutes. Turn out on a hot dish. Thicken the liquor slightly with flour and butter, adding a small amount of lemon juice and paprika.

MINCED LIVER

This, also, is a British recipe:

Boil 2 pounds of liver till it is firm enough to chop easily; then mince it rather fine with a little bacon. Chop a Spanish onion and fry slowly in butter or bacon fat—just long enough to make it soft; then add the liver, season very slightly with salt and pepper and cook slowly, stirring continually for ten or twelve minutes. Then add a cup of soup stock and a tablespoonful of chopped parsley and a very little Yorkshire relish (this last item may be omitted). Cover closely and let simmer gently for about an hour. Serve on toast.

CALF'S LIVER WITH FINE HERBS

This is a French recipe taken from an old English cook book:

1 calf's liver
1 bunch of savory herbs, including parsley
2 chopped shalots (onions may be used instead, but they should be parboiled before chopping)
1 teaspoonful of flour
1 tablespoonful of vinegar
1 tablespoonful of lemon juice
¼ pint of water
Pepper and salt to taste

Cut the liver into slices, dip in flour, and fry in

butter till a light gold color. Take out of pan and keep hot.

Mince the herbs very fine, put in frying pan, add a little more butter, add the remaining ingredients, simmer gently until the herbs are cooked, and then pour over liver.

CALF'S LIVER LARDED AND ROASTED

Take one calf's liver and lard it. Put it into vinegar with an onion cut in slices, parsley, thyme, bay leaf and a little salt and pepper. Let it remain in this pickle for twenty-four hours, then roast and baste it frequently with the vinegar. Serve it with brown gravy or a sauce made with chopped herbs. The time required for roasting is rather more than an hour.

MOCK DUCK

This is a Canadian recipe:

Take a fresh calf's liver and stuff with duck dressing (sage and onions, which should be parboiled before being mixed with the other ingredients). Put the stuffed liver in a pan, cover with strips of bacon and bake for two hours, basting frequently with the fat from the bacon strips. J. A. M. A.

LIVER COCKTAIL: LIVER IN EDIBLE FORM FOR PERNICIOUS ANEMIA PATIENT

An edible liver cocktail is prepared by William Thomas Wilkins, Jr., Piqua, Ohio (Journal A. M. A., Sept. 17, 1927), as follows: After having scraped the liver it is run through a meat grinder twice, the finest cutter being used, and placed on ice immediately. One-half pound of liver makes four tablespoonfuls of crushed product. Prepare a sauce as follows: Tomato catsup (Heinz), ½ cup; lemon juice, ¼ cup; Worcestershire sauce, 2 teaspoonfuls; chives (finely chopped), ½ teaspoonful, and salt and pepper, to taste. Mix the liver and sauce in the proportion of one part crushed liver to two and a half parts of sauce. Chill thoroughly and serve in a cocktail glass with salt crackers or wafers.

Correspondence

GALESBURG CITY COUNCIL ASKS ACCOUNTING ON CHILD CLINIC

Criticism Upon the Activities of Doctor East

Galesburg, Ill., Oct. 13, 1927.

To the Editor: The accompanying article, taken from the *Galesburg Register-Mail* of October 11 throws an interesting sidelight on the Child Welfare situation in Knox County, also the active interest taken in all such matters by Dr. Maley, who feels that in this particular case the Child Welfare Conferences, as conducted, do not care for the indigent of the community nor do they show proper ethical regard for the family physician of the children cared for.

These clinics, conducted under the name of "The Red Cross Child Welfare Conference," are only partially supported by the Red Cross, and apparently due to this fact the Red Cross authorities will take no action in attempting to change the method of conduct of the clinic, nor has any attempt been made to give care to the indigent children, as the major part of their activity.

Probably the greatest points of criticism of these conferences, as they are conducted, have been the small number of indigents cared for, the lack of ethical regard for the family physician and the fact that in some cases personal solicitation for the clinic has been carried on by paid members of the personnel.

B. V. McClanahan,

President Knox County Medical Society.

COUNCIL ASKS ACCOUNTING ON CHILD CLINIC

Appropriation for Welfare Work May Be Cut Off as Result of Alderman's Charges

Unless the child welfare organization of the local Red Cross furnishes the city council with an itemized statement of its expenditures at the next council meeting, the city appropriation for child welfare work will be withheld until such statement is forthcoming. This was decided at the adjourned council meeting last night following an attack on the work of the child welfare organization by Alderman Dr. W. H. Maley.

SAYS NEEDY SLIGHTED

Dr. Maley declared that he had the highest regard for the work of the Red Cross, but said that the Red Cross could be abused. He said that the city was appropriating $75 a month, or $900 a year, for child welfare work, and alleged that but little was being done for the needy children of the city. He further declared that the city medical department was doing more for the people in a day than the child welfare organization did in a year. He charged that the child welfare clinic was not being operated for the benefit of poor children, but for a few who were being brought to the clinic in limousines.

Dr. Maley further charged that improper braces had been furnished children and that exorbitant prices had been charged for them after they had been forced upon the unfortunate indi-

viduals. In one case, Dr. Maley said that the brace was heavier than the child wearing it.

COMMENT CAUSTIC

Caustic comments were made by Dr. Maley upon the activities of Dr. East, who visits the city on behalf of child welfare work. The people who actually need aid are not getting it, Dr. Maley said. The alderman then made a motion that no more money be given to the child welfare organization until an itemized list of expenditures is furnished. He said that a report of work had been received, but nothing to indicate where the money had gone.

Alderman Max J. Mack suggested that the city attorney request the child welfare group to furnish the statement of expenditures by the next council meeting, and that if there is no report then that further funds be refused. Dr. Maley agreed to this and the motion was thus passel unanimously.

The alleged inefficiency of the child welfare department was discussed informally by the aldermen after adjournment of the meeting.

MICHIGAN DOCTOR APPRECIATES MEDICAL HISTORY OF ILLINOIS

GREAT ASSISTANCE IN COMPILING MEDICAL HISTORY OF MICHIGAN

Flint, Michigan,
October 9, 1927

Lucius H. Zeuch, M. D.,
3014 Fullerton Ave.,
Chicago, Illinois
Dear Doctor Zeuch:

I received yesterday through the courtesy of the council of the Michigan State Medical Society, volume I, of the History of Medical Practice In Illinois. It is a colossal compilation, the arrangement is interesting and I have greatly enjoyed the early chapters. Much pleasure is, I am sure, in store from the reading. Please accept my sincere congratulations.

I am chairman of a committee to prepare a medical history of Michigan and have been engaged in the work, as time permitted since last December. From my first chapter, published in the September Journal, it will be seen that our thinking on the subject has been in parallel lines, but you discovered more about Michigan and the bootlegger in furs than I. I like the plan of running anecdotal matter along in the text and had decided about this for our own history. Similarly we regard "Pioneer physician" as those in practice in Michigan prior to the establishment of the medical department of the University of Michigan in 1851.

I am curious to know how many volumes you contemplate publishing. Thus far I haven't the remotest idea of the amount of printing we shall require.

What a wealth of attractive illustrations you have assembled! I have had great difficulty in obtaining a few. I have been thinking aloud for months through medical societies and the Journal for a likeness of a pioneer physician on horse-back with saddle-back equipment. How I envy you Dr. Klopper's drawing, page 128.

Again with congratulations, believe me

Yours truly,

C. B. BURR, M. D.

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examinations:

TRAINED NURSE
TRAINED NURSE (PSYCHIATRIC)

Applications for trained nurse and trained nurse (psychiatric) must be on file with the Civic Service Commission at Washington, D. C., not later than December 3. The date for assembling of competitors will be stated on their admission cards, and will be about ten days after the close of receipt of applications.

The examinations are to fill vacancies in the Panama Canal Service, and in positions requiring similar qualifications.

The entrance salary for female nurses is $120 a month, and for male nurses $125 a month. The entrance salary for female nurses (psychiatric) is $135 a month, and, for male nurses (psychiatric) $140 a month.

Competitors will be rated on practical questions in anatomy, hygiene, and nursing; and their education, training and experience.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the United States civil service board of examiners at the post office or custom house in any city.

THE ADMINISTRATION OF CALCIUM SALTS

Calcium therapy has acquired a new interest in medicine along with the growing knowledge of the parts that the element may play in a variety of physiologic functions. These are no longer restricted to the

building of the inorganic structure of the bones—a feature in which calcium is the most conspicuous element and is involved to the extent of several pounds in the adult person. Calcium has also become associated in as yet vaguely understood ways with the regulation of nervous, muscular and grandular activities, and in the coagulation of the blood; and it is believed to have some relations to variations in the permeability of the blood vessels and cells in such phenomena as transudation, the genesis of edema, and the appearance of urticarias.[1]

According to Sherman, the average calcium requirement of an adult person daily is about 0.5 gm. As comparatively few common foods yield the element in abundance, it can readily happen that the daily diet may fail to furnish the requisite amount. Furthermore, the absorption of calcium seems to be modified in no small measure by alimentary conditions, notably the reaction of the intestinal contents. These considerations lend an obvious importance to the problem of administering calcium in satisfactory ways when such therapy seems to be indicated. Intravenous and subcutaneous procedures are attended with dangers or discomfitures; therefore the possibilities of the oral route call for careful consideration. Ordinary balance experiments afford only limited indications of the efficacy of ingestion of calcium-bearing substances because the alimentary tract is the seat of both absorption and excretion of the element. The fecal calcium may or may not have taken part in the tissue of functions; a mere analysis of the output will not reveal the desired answer. Consequently, in recent years attention has come to be centered on the content of circulating calcium, which under normal dietary conditions is not appreciably changed.

A survey of the literature on the absorption of calcium as it may be reflected in a change in the blood concentration of the element might leave one unconvinced of the efficacy of administering calcium compounds by mouth. Many clinicians have accordingly abandoned the practice. The more recent studies give evidence, however, that with due attention to the conditions of administration it is possible to elevate the serum calcium concentration by the oral route of calcium supply. This is shown in the reports of Roe and Kahn. In experiments on man with calcium lactate, they believed the optimal dose of this salt to be 5 gm. This intake is adequate under normal conditions to produce definite increments in the blood concentration of calcium in the course of a few hours. Such results are obtained, however, only by ingestion of aqueous solutions when the digestive tract is comparatively empty; that is, either before breakfast or several hours after food has been consumed. Simultaneous ingestion of various foods along with calcium lactate in 5 gm. doses and larger amounts of the salt are likely to produce a marked depression of the rate of absorption of calcium from the intestinal tract. In the case of the foods, the resultant decreased hydrogen ion concentrations are probably responsible for the unsatisfactory outcome. The absorption of the element is notably depressed by a tendency to alkalinity in the path of absorption. Larger doses of the calcium salts probably prevent optimal absorption because they produce some irritation of the intestinal mucosa. It appears, therefore, that administration of calcium salts, notably calcium lactate, can be made therapeutically effective if they are given in not too large amounts under essentially fasting conditions. —J. A. M. A.

1. New and Nonofficial Remedies, 1927, p. 109.

REPORT ON WINDOW GLASS SUBSTITUTES

The Council on Physical Therapy publishes a report of work carried out under its auspices, to determine the efficiency of certain window glass substitutes for transmitting the antirachitic rays of sunlight. The transmission of ultraviolet rays was determined both by spectroscopic analysis and by the biologic effects of the transmitted light on the growth of chickens. The following materials were tested: Vitaglass (transparent), Cel-O-Glass, Flex-O-Glass and Corning Glass. Vitaglass and Corning Glass are stated to be true glasses. Celoglass is composed of wire mesh screen filled with an apparently celluloidinous material. Flexoglass is a thin, fairly loosely woven cloth treated with a paraffin-like substance. The Vitaglass and Celoglass transmitted a large percentage of the sun's ultraviolet rays since the chickens reared behind these glasses showed similar development as those which received ultraviolet radiation from the artificial source. Chickens which received the sunlight through Flexoglass did not show the same growth as did the irradiated controls, but did gain more rapidly than those receiving sunlight through window glass. The Corning Glass was received too late for the biologic test, but from the spectroscopic measurements it is evident that this glass is equal to the best of those tests in its ability to transmit the antirachitic rays of the sun. The study leads to the conclusion that there are now available materials for glazing windows which do not possess the fault of window glass in excluding the health-giving rays of sunlight.—*Jour. A. M. A.*, May 14, 1927.

MATERNAL PATERNALISM

Here is a typical case of "uplift," the end-results are generally uniform with an over-increasing mania to reach out farther and farther until the entire community is encompassed. Too, this sort of thing has the sanction of government, for the following is taken from publicity sheets issued to the press of the United States by the U. S. Children's Bureau:

"The New York Maternity Center Association takes care of pregnant women, and last year—1926—it was so successful in this work that not a single one of the 2,000 mothers cared for died as result of childbirth. If this group had shown the same maternal death rate as that for the city in general, eight or more of the 2,000 would have lost their lives. The association formerly gave care exclusively to poor women, but *last year it offered its services to mothers of profes-*

sional and salaried classes and nearly 200 such mothers took advantage of them."

Of course, your own interpretation can be placed on the statement of "took advantage of them."

The statement was carried under the caption of "Child-Bearing Need Not Be a Dangerous Occupation." —*Ohio State Medical Journal.*

POISONS AND HARMFUL DRUGS FOUND IN SOME COSMETICS

The dangerous character of wood alcohol is so well established that it would appear almost incredible that anyone would dare offer a preparation containing wood alcohol for use on the human body. Wood alcohol is, however, but one of the many poisonous drugs that have been found in so-called cosmetics.

Of the potent drugs of a possibly harmful nature that are used in so-called hair restoratives, there are lead acetate, silver nitrate, paraphenylendiamine, and resorcin. The beauty washes and face enamels contain an even more impressive array of dangerously potent drugs including flake white or lead carbonate, lead plaster, corrosive sublimate or mercuric chloride, calomel, white precipitate or ammoniated mercury, pearl white or bismuth subnitrate, zinc white or zinc oxide, Chinese or commercial zinc oxide and zinc soap.

Flake white is the ordinary white lead of commerce. It is also known as body white, silver white, Dutch white, French white, London white, Roman white, and China white. It is generally recognized as the common cause of industrial lead poisoning.

It has also been observed that females are more susceptible to the action of metallic poisons than are males.—*United States Daily.*

OBERMAYER'S TEST FOR INDICAN IN THE URINE

Dr. Dean N. Beacom of Denver in *Colorado Medicine,* August, 1927, outlines a test as follows:

A test for indican should be a part of every routine examination of the urine because it tells much concerning the patient not only from a diagnostic but also from a prognostic standpoint since the presence of this substance is usually indicative of putrefaction[1]. This process most often occurs in the intestine, but it may be brought about by the decomposition of exudates anywhere in the body as in empyema, bronchiectasis, and large tuberculous cavities. Obermayer's test is probably the best one yet devised for the detection of indican because of its simplicity and clinical accuracy. However, there are a few points in the technic of the test which have to be observed if accurate results are desired.

In brief, the test is performed as follows: A few cubic centimeters of urine are placed in a test tube and an equal amount of Obermayer's reagent (concentrated hydrochloric acid, 1000 c.c., and ferric chlorid, 2 gm.) is added. About one cubic centimeter of chloroform is placed in the test tube and the solution is mixed by inverting a few times. The choloroform sinks to the bottom, and will take on a blue or occasionally a red color, which is proportionate in intensity to the amount of indican present.

This test is a very simple one, and the results are very definite. But some workers are not as careful in using correct proportions of urine and Obermayer's reagent as they should be. The solutions are usually poured into a test tube, the amounts being estimated with the eye. This method can be as accurate as is needed for clinical purposes, but often during the rush of an examination an excess of one of the solutions may be added. If this happens, the results will be incorrect.

A large number of positive urines were examined and the results recorded when different amounts of the reagent and urine were placed together in a test tube. The results brought out the fact that the strongest test was obtained when equal parts were used. The findings on one urine which are given below are typical of the entire series.

Urine	Obermayer's	Chloroform	Reaction
1 c.c.	9 c.c.	1 c.c.	Negative
2 c.c.	8 c.c.	1 c.c.	Negative
3 c.c.	7 c.c.	1 c.c.	Negative
4 c.c.	6 c.c.	1 c.c.	Weak Positive
5 c.c.	5 c.c.	1 c.c.	Strong Positive
6 c.c.	4 c.c.	1 c.c.	Weak Positive
7 c.c.	3 c.c.	1 c.c.	Faint trace
8 c.c.	2 c.c.	1 c.c.	Negative
9 c.c.	1 c.c.	1 c.c.	Negative

All of the tests were controlled by measuring accurately the amounts of urine and reagents, by allowing Obermayer's reagent to react with the urine the same length of time in each case, and by mixing each tube by inverting the same number of times.

Often it is not convenient to measure the amounts of the different liquids by means of a pipet. Some workers use graduated centrifuge tubes for obtaining the correct amounts. Others use the method as suggested by Todd[2] of marking test tubes indicating the amounts of urine and reagents to be used. These tubes are employed only for the indican test. This method is advantageous because the same amounts of the different liquids are always used, thus allowing a more nearly accurate quantitative comparison in different patients and also in different specimens from the same patient. But in interpreting the findings it is always necessary to consider the amount of urine which the patient is voiding since the same amount of putrefaction will give a much stronger test when only a small amount of urine is passed daily than when the output is greater in amount.

REFERENCES

1. Simon, C. E.: Clinical Diagnosis, ed. 10, Philadelphia and New York, 1922, Lea and Febiger, p. 650.
2. Todd, J. C.: Clinical Diagnosis by Laboratory Methods, ed. 5, Philadelphia, 1924, W. B. Saunders Company, p. 127.

FISHERMAN'S LUCK

"I think the man you married is a fine-looking fellow."

"Ah, but you should have seen the one that got away."—*Everybody's Weekly.*

A COMPARISON OF MALARIAL AND TRYPARSAMIDE THERAPY IN PARESIS

H. H. Reese

The Wisconsin Medical Journal, 25: 289-292 (June) 1926.

After research in Europe it was decided that arsphenamines aggravate the clinical picture of paresis and that their use was contra-indicated in the treatment of paresis. Experiments with the knowledge of the occurrence of remissions of symptoms in paresis following a febrile disease showed that malaria produced the longest arrest.

Before administering the malaria plasmodia the patient's drug idiosyncrasy against quinine should be tested to prevent symptoms of cinchonism later when the malarial infection has to be treated.

The technical procedure of the artificial malarial infection is carried out as follows: After a period of clinical observation, which includes record of weight and usually 1 or 2 lumbar punctures, the patient is inoculated intravenously with 3 to 5 c. c. of blood obtained from a patient suffering from tertian malaria. The exclusive use of the intravenous injections is advisable because of the certainty of a "take" and because of the shortened and more uniform duration of the incubation period. Such a small injection of blood has never produced any anaphylactic reaction. After 4 to 8 days the patient thus infected has definite febrile attacks beginning with a chill. The tertian type mostly changes into a diurnal type.

During the period of malarial paroxysms with temperature of 104, or above, one never sees a leukocytosis. Complications have very rarely been encountered, such as herpes, mild jaundice, or convulsions. Nevertheless, the heart function, the blood findings, the bowels, the genito-urinary tract and the diet must be carefully watched. The total number of chills should be from 8 to 15, according to the constitution of the patient. It is true that the patient becomes very anemic and the associated loss of appetite is followed by a marked loss of weight. These conditions do not affect paretics greatly as they stand these discomforts with the equanimity typical of paresis. Furthermore, recovery takes place within approximately 2 weeks after quinine medication.

The treatment of the malaria itself is conducted as follows: Quinine sulfate, grs. 6, given for 12 days twice a day. Three days rest period, and from this point 3 days of treatment are alternated with 3 days of rest until a total of about 250 grains of quinine have been administered. Quinine is so efficient in dealing with inoculation malaria that but one case of the author's has had a relapse. During the time of psychic convalescence mercury rubs are given.

Of the author's patients 50 per cent were improved, showing only slight psychotic and somatic disturbances; 20 per cent showed great improvement, were clinically arrested and their mentality returned to normal; 30 per cent remained without change in their clinical and mental symptomatology.

Spontaneous cure occurs in about 5 to 11 per cent of untreated paretics and is very similar to the arrest clinically through malaria. The author obtained his come soon after cure of the malarial infection or not until several months later. The efficiency of this treatment is based on no known principles.

Tryparsamide is the only antiluetic drug that helps paresis, it is often very beneficial where other measures fail. The drug is a white, odorless, tasteless, crystalline solid and extremely soluble in water. It is administered intravenously in 3 gm. doses dissolved in 10 c. c. of sterile, freshly distilled water. This solution is given at intervals of 1 week and for a period of 8 weeks, at the same time administering mercuric salicylate intramuscularly in 1 gr. doses alternating with 8 tryparsamide injections. This constitutes one course of treatment. After a rest period of 5 to 8 weeks similar courses are repeated until there are no more clinical and serological evidences of activity.

The author believes that with this drug 30 per cent can be clinically arrested and 66 per cent can be directly improved.

The danger of producing optic nerve changes with tyrparsamide is practically nil if a thorough eye examination is made previous to its administration. In the author's series treatment was stopped if changes of vision or fields could be demonstrated or were complained of. This drug has a definite action on nutrition, the majority of the author's patients decidedly gaining weight.

The ultimate goal of antiparetic therapy is to find a combination of methods which will render the patient permanently free from progressive neurological symptoms and produce a state of complete serological negativity.

Malarial treatment leads to clinical improvement in about 30 per cent of the cases within a month after cure of the malarial infection. Tryparsamide therapy requires 4 or 5 months to bring about improvement but is decidedly beneficial in about 60 per cent of the cases. Malarial treatment cannot be used in emaciated patients, while tryparsamide therapy results in marked physical improvement, and if properly controlled is not harmful to the optic tract.

FEW WORDS

A city lad stopped along the side of a country road and got out of his car to josh a barefoot rural boy. Leaning over a fence which happened to be handy, he said:

"Your corn is a little yellow, isn't it, son?"

"Yes, sir, that's the kind we planted."

"Not going to have more than half a crop are you?"

"No, sir, the landlord gets the other half."

"Then there's not much between you and a dam-fool, is there?"

"No, sir, nothing but that fence."

RAH, RAH ANALYSIS

"I wish some college clothes."

"Athletic, humorous, or studious?"—*Louisville Courier-Journal.*

Original Articles

PUBLIC HEALTH ACTIVITIES OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK*

JAMES E. SADLIER, M.D., F.A.C.S.
President of The Medical Society of the State of New York
POUGHKEEPSIE, N. Y.

Mr. President and Members of the Section on Public Health and Hygiene of the Illinois State Medical Society.

I am deeply appreciative of the honor bestowed when you invited me to be with you and discuss some phase of the great subject of Preventive Medicine. As one who has spent most of the period of his professional career in the special field of surgery, it would seem that my discussion today should be in the surgical section rather than to attempt to launch into that unlimited field known as Preventive Medicine, or, more correctly speaking, "the Prevention of Disease." For this digression from my special work, I make no apology, but only hope that the physicians of this state of Illinois will likewise digress, and, irrespective of what particular branch of the healing art they are practicing, will endeavor to devote some portion of their time to the subject of prevention of disease. With the exception of public health officials and research workers, the great rank and file of the medical profession devote their lives in combating and trying to overcome pathological processes, known by various names, but which are definitely established disease; and that is, and always will be, a great portion of the activities of medical men. But no careful thinking physician can help being impressed as he goes about his daily clinical work, by the tremendous amount of illness with its consequent loss of life, suffering and economic waste, which could have been prevented by the proper application of known scientific methods. Neither would I underrate the beautiful spirit of self-sacrifice shown by medical men in their endeavor, through long hours of hard work, to salvage these poor unfortunates whose diseased conditions either should not have been, or should have been cared for at a time when they could be easily and rapidly eradicated.

*Read before Section on Public Health and Hygiene, Illinois State Medical Society, Moline, June 1, 1927.

When one contemplates the subject of the prevention of disease, one's mind naturally wanders to a consideration of typhoid, diphtheria, smallpox, tetanus, etc., for it is by these diseases of a communicable type that one is most impressed as being preventable, and indeed such is the case. But why allow ourselves to stop with the consideration of this type of disease? True it is that in using the established scientific preventive measures to eliminate such diseases we are practicing physiological instead of pathological medicine and accomplishing thereby an amount of good in the prevention of disease so great that it is difficult to estimate. Nevertheless, a greater and broader field opens before us when we view the possibility of prevention, by early treatment, of the extension and spread of definite pathology; for instance, the proper care and treatment of all acute infections of the upper respiratory tract, thereby eliminating the probable complications of severe grade such as mastoiditis, or bronchopneumonia; the removal of a focus of acute infection in the abdomen, such as an acute appendicitis, before it has had an opportunity to develop a septic peritonitis; the closure of perforations of the hollow viscera prior to the spread of infective material; the prenatal care of the pregnant woman; the early surgical treatment of the known sources of irritation, that we may forestall and prevent the proliferation and lawless growth of epithelial tissue, commonly known as cancer. One could go on indefinitely enumerating the various conditions which, if combatted by some form of treatment, medical, surgical or otherwise, would prevent many of the serious types of illness with their resulting morbidity and mortality. In order for the physician to accomplish the greatest amount of service in preventing the spread of disease there must be constant vigilance in the care of acute conditions no matter how trivial they seem. For those conditions which are not acute in their onset we have a more difficult problem to solve, and here it is that the periodic physical examination of the supposedly healthy person is going to be of paramount importance and will be the means of enabling us to detect disease in its early stages, and whilst curable. In order to popularize this method it means that public education along health lines must be pushed to a greater extent by the physician than heretofore. We are living

now in a period in the history of medicine when conditions and methods are changing very rapidly; no longer can the physician disregard this fact and continue to devote his entire time to the study and treatment of established disease. He must be a teacher as well; he must assume the responsibility of instructing his clientele in all that is required to be known of the plain facts in relation to the prevention of disease and in so doing he must inculcate in their minds the necessity for periodic health examinations. The task of educating the people up to the point of being examined physically every one or two years is tremendous, but will be made easier by the increasing interest that is shown in matters appertaining to public health. The American does not fear knowledge, but rather does he abhor ignorance; all of this means that there must be a new and better contact between physician and patient. The ethical barrier which necessitated the patient sending for the physician must to a certain extent be cast aside and the medical man must overcome his delicacy of feeling and insist upon his patrons coming to him when they are apparently in good health, in order that examination be made which may reveal conditions of impending or actual disease. The physician who adopts this plan will soon have the confidence and esteem of his patients and his reputation will be untarnished by any charge of commercialism or unethical practice. The public interest in health questions and in personal care when sick is steadily advancing, as demonstrated by the increasing activity of all organizations of either a medical or lay character that have to do with the prevention or cure of disease. Hospital beddage over the country is increasing very rapidly due to the influx of patients from rural sections to the nearest cities of the third and fourth class, where they can have the benefits to be derived from skilled nursing, laboratories, etc., as well as medical care. The public is generously applying its money towards the cost of this greater hospital construction. Two counties in which I am especially interested had a hospital accommodation in 1912 for about 90 bed patients; at the present time there are over 600 hospital beds in those counties, all made necessary by the trend of the public mind, whether in rural or urban sections, to have proper hospitalization when sick. Our Governor, during 1923, called a conference of medical men from all parts of the state to discuss in part "What shall be done about the rural sections that are gradually becoming depleted of physicians?" It was a noble thought upon his part, but it was demonstrated to him that many sections had already answered the question by relying upon the most available hospital and that one of the great duties of the state consisted in the construction of adequate highways and removal of snow from them during the winter, in order that the rural physician could get about to patients or encourage their removal to hospitals. These prosaic measures constitute another viewpoint in preventive medicine.

In New York State we are endeavoring in many ways to further the progress of preventive medicine. The organized profession, The Medical Society of the State of New York, is initiating, planning and actively working throughout the state to educate the people to the advantage to be derived from preventive medicine. During the past year we succeeded in getting a revised Medical Practice Act, the enforcement of which will eliminate charlatanism, cults, and all types of irregular practice. Our present Governor appoints a committee of medical men, who are nominated by the State Medical Society, to advise him with reference to medical questions which come under his jurisdiction. We are reasonably proud of the work done in our Anti-Diphtheria Campaign—the solgan being "No Diphtheria by 1930." This campaign is in charge of The Medical Society of the State of New York, the State Board of Health, and the State Charities Aid Association, plus many lay organizations; and they are working strenuously to rid the state of this disease. Education of parents to the necessity of having their children immunized is being conducted along many lines, some of them quite new in medical circles, for instance, there is to be spread throughout the state upon billboards of the Outdoor Advertising Company the legend that "Diphtheria is preventable," etc. About $45,000 is to become available annually to care for the expense of the activities along this one line of prevention of disease. Although the work is only getting under way in some sections, there are other areas of the state that are most encouraging. For instance, Auburn has had no deaths from diphtheria for

over two years, due to the splendid campaign carried on by Dr. Sears and his efficient workers. Hudson has not had a death from this disease in over one year and Buffalo with 331 deaths from diphtheria during 1919, had only 30 during 1925. We hope for great results in this campaign, but like all preventive work it will only be successful if the practicing physician assumes an active and responsible leadership and thus insures the immunization of the child during the pre-school age, for in our state 60 per cent of the deaths from diphtheria are in that period. Hence how fallacious it is to leave this work to school physicians, health authorities, nurses, etc. The immunization should have been performed prior to the beginning of the school life of the child. By so doing the family physician loses none of his prestige, as is the case when requested to perform this service by a local Board of Health. Rather does he inculcate in the minds of his patrons the thought that he is interested and alert in his guardianship of their health and is practicing the known methods of prevention. Toxin-antitoxin as a preventive of diphtheria has been known for a sufficient number of years for all physicians to have advocated its use and they should have instilled in the minds of the parents the necessity for its administration to their children. In spite of this known fact about 700 lives were sacrificed from this disease in New York City (Van Etten) during 1925. Does this not suggest to us that physicians are not utilizing the knowledge they possess and are relying too much upon the work of health authorities, lay organizations, etc., rather than assuming the leadership which is their prerogative and duty in stamping out this vicious disease.

The discovery of the bacterial origin of some diseases by Pasteur in 1862 and immediately followed by its practical application by Lord Lister, did not actually become an established practice with the medical profession for about 20 years. The same delay occurred following Koch's discovery of the bacillus of tuberculosis. Shall we repeat those delays in the case of immunization to prevent diphtheria, or shall we become active and shorten the period between the discovery and its practical application? The Medical Society of the State of New York is insisting that each component county society shall have an active committee which shall see that established preventive medical measures are taught and practiced throughout their respective counties. These committees vary greatly in their method of procedure, but all have the same ultimate object, viz.; to educate the people along the lines of prevention of disease and encourage the physician to utilize his knowledge and become a leader rather than a follower, a man who aims to prevent as well as to treat disease. Many of us who have practiced the healing art for a quarter of a century or more can recall the days when, in consultation, we were in at the death of several cases of tetanus each year. Now, with the very general prophylatcic use of tetanus antitoxin we seldom, almost never, see a case. I wish I could speak as optimistically of the elimination of smallpox by vaccination, but there the story is somewhat different. Prejudice and ignorance have succeeded in limiting the use of vaccination in this country so that with the almost continuous outbreaks here and there over the United States one fears in the future there will be a fearful awakening in the form of a widespread epidemic.

Post graduate medical education is necessary to every physician each year in order that present day methods of examination and treatment may be given his clientele, also that he may intelligently assist and carry on along the lines of preventive medicine. By Osler this was known as "Brain dusting." Our State Medical Society has felt that it was not always possible for the physician to leave his practice and repair to a distant city to receive such education, hence, through our committee upon Public Health and Medical Education, courses are being given in the vicinity of the home and many counties are availing themselves of this easy method of obtaining post graduate medical education. Men of known reputation are obtained as teachers; courses are given in obstetrics, pediatrics, cardiology, tubercluosis and preventive medicine, all of which tend to bring the physicians of a county up to a higher grade of efficiency and enthuse them along the lines of the care of disease when established, or its prevention when possible. Some localities, especially the larger cities such as New York and Brooklyn, are having excellent courses of lectures and instruction as to methods of perfecting the periodic examination of sup-

posedly well people. This is also being taught most interestingly by means of the motion picture. Everywhere throughout the 61 counties of the state we are noting a gradual awakening of the physicians to the necessity and responsibility in assuming a leadership along the proven and established lines of disease prevention. By so doing they will broaden the field of their individual service to humanity and set an example for future generations that will make the world safe from preventive or unnecessary disease.

Study of Cardiac Disease. The seemingly ever-increasing mortality and morbidity from diseases of the heart has led our State Medical Society to appoint a committee of expert cardiologists to study the conditions from a broad standpoint and see what can be done, especially along the lines of prevention. The work of this committee has just nicely started; time will be required as well as the expenditure of considerable money before results of importance can be secured. But we are hoping that by this study much information can be obtained that will assist in stemming the tide of deaths due to the various cardiac diseases. Personally, I am of the opinion that when the work of this committee is consummated we will find that we are faced with a forceful argument in favor of the periodic examination of the apparently well, in order to hunt up foci of infection which may be the causative factor in producing much of the present pathology of the heart. True, many other reasons exist that are well known to all of us, and undoubtedly many that are unknown at the present time. Nevertheless, when the medical profession, as a whole, seeks, by physical examination, to determine the condition of the apparently well people, we will be surprised not only at the amount of pathology found, but by the steadily decreasing death rate as we remove foci of infection that are undermining the health of our constituents.

Public Relations Committee. The most notable accomplishment of the Medical Society of the State of New York during the present year consisted of the gathering together of the various voluntary health organizations and the Medical Society of the State, followed by the appointment of a committee to be known as The Public Relations Committee, the object of the committee being to consider problems arising on the common ground between medical practice and public health with a view to bringing about better understanding, and so far as practicable, harmonious action in the common interests of all concerned. It is understood that the State Department of Health shall be advised with, in all activities in which it is interested and of which it is the normal custodian. One can readily visualize the great possibilities and future benefits to be derived from an association composed of the Organized Medical Body, voluntary health organizations, State Department of Health, etc., meeting upon a common ground through the medium of a joint committee to work out the knotty problems of public health and prevention of disease and to eliminate the dysfunction, misunderstanding, suspicion and economic waste which has ever been present when these bodies are operating along their own particular line and not in cooperation with each other. It has become a matter of history that any campaign along the lines of preventive medicine must have the backing, cooperation and active interest of the medical profession of the locality or it will fall flat as soon as the support of the voluntary organization ceases. At times, even during the progress of such activities, we see discord and disruption resulting from lack of cooperation and misunderstanding.

Naturally the physician is zealous to protect his profession, his individual rights and resents undue interference by welfare organizations, departments of health, etc. Constantly before him looms the spectre of state medicine. He has knowledge of the great financial resources controlled by many such organizations and of the great influence they can marshal in our legislative bodies. Hence he feels the necessity to protect himself and his profession and conducts a guerilla warfare against the very organizations which he should be assisting, for all public health activities should be unhampered, and to secure the best results, harmonious cooperation of all concerned is essential. We, the medical men of the country, could, as in the days gone by, treat established disease without the help and influence of the voluntary health organizations. The departments of health could carry on their activities along the lines of communicable disease, but the medical field of the present and future is bigger and broader than just the treatment of

established disease or the limitation of communicable conditions. Future medicine means prevention of disease through education of the public along proper lines, the early recognition of the outposts along the frontier of established disease and the recognition that a new era in the history of medicine is dawning where we, as the logical custodians of the public health, will be responsible for the prevention of disease to as great an extent as the science and art of medicine at the present day warrants. Can the medical profession do this alone? No. It is true that most of the basic principles of modern health methods were established by physicians and that the success of public health activities is in direct proportion to the interest taken by the medical profession. But why go it alone when we have so many voluntary lay organizations, frequently with great financial resources, willing and able to cooperate with us, accept our guidance and produce as an end result a more perfect working unit with far greater possibilities of usefulness to the public? Then, in accord and cooperation with the State Department of Health, with its various activities and ramifications reaching into each city, village and township, we will be fortifying the health department rather than continuing the attitude of suspicion and distrust which has seemed to exist; and the three organizations, Organized Medicine, Voluntary Health and Welfare Organizations and Department of Health will be so interlocked as to form one great machine to work in unison to far greater advantage than could be possible where each worked separately. Allow me to quote from the discussion by Dr. Rankin presented at the International Congress of Social Welfare in Washington:

> Just as medicine has been extending its lines farther and farther away from the cure of existing disease and toward the anticipation of disease, so public health, with its initial interest and work largely restricted to prevention, has found that much of prevention is predicated on treatment and that to realize a further reduction in mortality and morbidity rates, its program must insist upon arrangements for the more adequate treatment of disease, disease in reality as well as in anticipation, for, after all, about the only difference between cure and prevention is chronologic. The public can no more renounce its interest and its rights in the treatment of disease than the medical profession can afford to restrict its work entirely to cure.
>
> In the development of medicine and public health the work of disease prevention and disease treatment have become so closely related that it is impossible to separate the two. Physiology fades into pathology, health into disease, as the green leaf of spring becomes transformed into the brown death of autumn. The unoccupied field in medicine, of health promotion and disease prevention, cannot be separated into two parts, one involving the problem of cure, the other that of prevention. The two problems are inseparable.
>
> The interrelated, inseparable problems of disease prevention and treatment, can not be dealt with by two separate forces, one responsible for cure and the other for prevention. Separation of forces means lack of understanding and absence of coordination between workers whose tasks are much the same; it means friction and conflict with resulting harm to both medicine and public health. Combination of forces means understanding, coordination and increased efficiency for both branches of medicine.
>
> But there is a much more important reason why two forces, one a group interested in prevention and public health and the other in the private practice of medicine, cannot occupy this field of disease prevention and health promotion, and this more important reason is that, practically speaking, there is but one group which is or can be made anything like adequate for dealing with this problem. That group is the medical profession. If the health officials of this country should undertake to organize, train and enlist a corps of workers sufficient to deal with the present field of disease prevention and health promotion, they would have to contemplate a force of from 100,000 to 200,000 professionally trained officers; furthermore, that force would be engaged in a task so intimately related to the work of private practice, with so much overlapping, that there would be constant friction, conflict, lost motion and inefficiency. There can be but one well-organized force in the field of vital conservation, and that force must, both by reason and necessity, be made up of health officials, always greatly limited in number, and the rank and file of the medical profession.
>
> As the work of health officials and physicians cannot be separated, but must be coordinated, an understanding as to related responsibilities is essential. A proper division of responsibilities will be predicated on the general principle that the members of the medical profession shall perform such items of public health service, both of a curative and preventive character, as their training and number make possible, and that for such items of service, they shall be paid a reasonable compensation, the medical profession taking into consideration, in determining what is reasonable compensation, the difference between bulk work and individual case work, between wholesale and retail prices; and, further, that health officials, representing the public interest, shall so organize and restrict their personnel as to provide for the medical profession rendering the aforementioned services, the health officials devoting themselves largely to enforcement of health laws, particularly quarantine, passing upon items of service rendered by the profession for which remuneration is claimed, and in so organizing social and professional forces as to enable these forces to more completely

occupy and hold the field of disease prevention and health promotion.

In furthering this idea of cooperation between the various organizations making for better health conditions the House of Delegates of The Medical Society of the State of New York has requested the appointment of a Committe on Public Relations in each county society throughout the state, thus carrying the work of the State Committee into each county and unifying the forces which are at the present time working along separate lines and not always in harmony with the medical fraternity. Prior to the establishment of this idea we had one county (Suffolk) which, through its county medical society, had established such a cordial relationship, with all vountary organizations, Health Departments, etc., that it presents a notable example of the great benefit to be derived.

DISCUSSION

Dr. E. P. Sloan, Bloomington: I am sure that you all understand now why the great medical society of New York State selected that statesman, philosopher and public health man, Dr. Sadlier, for their president for this particular year. The relation of public health departments and public health work to the general profession is one of the most important questions that is up before the medical profession today. The fact that the New York Medical Society has, under the leadership of the group of men that have been in control in the last few years, made such phenomenal progress, should commend their policies to us in Illinois. The best interests of all the people of New York have been furthered by their unified efforts.

I am very glad indeed that Dr. Sadlier is with this public health section today. The section of public health of the Illinois State Medical Society for a long time was somewhat in the position of an ugly stepchild in the family. It was treated about like an ugly step-child is often treated. That we have had Dr. Sadlier with us is certainly a high point to be added to our score. This public health section of our state society is coming into its own.

I am sorry that it has not been possible for every member of the Illinois State Medical Society to hear Dr. Sadlier's address. I am sure we all appreciate the fact that he has traveled so far to be with us and that we feel that his talk will go a long ways towards bringing about a proper relation between the public health section and the rest of the profession, to their mutual benefit.

Dr. G. Henry Mundt, Chicago: It has been a pleasure for me to hear Dr. Sadlier. The only difficulty with this thing is that it should have been given before the entire organization. It is a shame for a man to come the distance Dr. Sadlier did with the message that he brought and have such a small crowd here, and yet I have been in medical organizations where the number was not to exceed a dozen, and I think in one or two instances those meetings have been as valuable as a large meeting possibly could be.

Periodical health examination, as the doctor said, is here. The thing is sold to the general public without question. There is some difficulty in selling it to the medical profession. There is a great question in my mind whether the men in the rural counties are not more sold to periodic health examinations than the men in the large cities. I feel that, because I have talked to men in both places. We must sell periodic health examination to the doctors. They are the fellows who must buy it. The public want it. If they didn't want it, there wouldn't be the success of the urine clubs all over this country that there is.

As to the general hospitalization of people, I think one must think twice. There may be considerable advantage to general hospitalization, but there is certainly an economic problem which must be considered when we consider hospitalizing everybody who is ill. Don't get the impression that I think that the average patient will not be handled better in a well-conducted and well-equipped hospital than they will be in their private homes, but there is an economic something which we must consider if we are going to give the thing the thought that we should.

I should like to ask the doctor in closing whether he will tell us a little about the Milbank Foundation. We all know something about it. It has been my impression that it is a matter of survey more than anything else.

I am glad to know that the State of New York has gotten so far ahead in the coordination of organized medicine and the volunteer and official health activities. That is a thing that is coming, without any question. During the last year the American Medical Association had a two-day meeting in Chicago, which I think was quite successful. Nothing definite was expected from that meeting; I don't think anything particularly was gained from it; but at the end of two or three or five years, I believe something will come out of that type of association which will be of value to the general public and to medicine. And by the way, every activity in medicine may well be weighed in the scale. Is it for the welfare of the general public? If it is, it is for the welfare of medicine. If it is not, it is not for the welfare of medicine.

Dr. Mather Pfeiffenberger, Alton: It has been a pleasure for me to listen to Dr. Sadlier's paper. I think the keynote of his whole argument we all recognize at this time is that we must have the coordinated action of all people concerned in the matter of accomplishing anything in public health. It has been my observation in the past that we have been pulling in opposite directions and not accomplishing much, and we are just awakening to the idea that we must start to pull together in the right direction. Dr. Sadlier's relation of the conditions in Long Island should be an inspiration to anybody or to any organization on what can be accomplished. It is just following out the old prohecy of Pasteur in that every infectious disease will ultimately be mastered. I think we are beginning

to realize that more and more, and, probably, after we have gone through with a concerted effort in the management of the infectious diseases and the prevention of diseases in general, we might go a step further in the direction of preventing things in a hereditary way. That is something in the future. Not in the way of birth control, which the Illinois Medical Society does not foster; nor anything of that character; but in the way of proper selection.

In our own legislature they are considering the sterilization of the insane. I happened to be on the committee years ago to look into this particular matter and it is one that must be handled with a great deal of study and a great deal of thought so as not to get into a condition of abusing that particular law.

The medical profession, lay organizations and the public health must work in unison in order to accomplish anything in the future. We have in the last 50 years learned enough for the benefit of humanity to tell it to them in a straight-forward manner now, so that they will appreciate what the medical profession and medical science can do for them and is willing to do for them. We are our brother's keeper and we are the watch-dogs of the health of our fellow beings.

It has been a great pleasure to have listened to Dr. Sadlier's paper. I have had some correspondence with the doctor, but it will be a pleasure to meet him personally.

Dr. Sadlier, in response: With reference to the suggestion I made about the lack of cooperation by the younger men in conducting periodic health examinations, I would like to say that about three weeks ago I had a little dinner down at the Biltmore Hotel in New York city. I had congregated together a number of the leading men in the medical society of the state of New York. And the thought came out from them, not from me, although it had been an observation of mine, that we were selling periodic health examination to the men who had been in active operation for ten, twenty or thirty years very well, but something was lacking in getting it over with the younger men, the very men whom we need to put it over to, and the men who should be doing it. And it was suggested to me at that particular meeting that I should take this matter up with the deans of the various medical colleges in the State of New York, and see if something cannot be done to impress upon the medical students the necessity of taking this over. But, of course, I think we are all agreed that the question of periodic health examination is not being sold as fast as it should over this country. It is rather lagging.

In reference to the doctor's inquiry with reference to the Milbank Foundation, he has a rather mistaken idea. It is a great foundation in the State of New York, which actually supplies the money, and the State Charities Aid Association, which is the greatest volunteer organization in the state, carries on the survey work for them.

THE DIAGNOSIS AND TREATMENT OF BLADDER TUMORS*

B. C. CORBUS, M. D., F. A. C.S.

Attending Urologist, Evanston, Lakeview and John B. Murphy Memorial Hospitals

CHICAGO

Since vesical neoplasms are attended with but few symptoms in their early development, they are usually far advanced before they manifest their existence.

Nothwithstanding the fact that since Nitze introduced the cystoscope in 1879 each succeeding year has seen a distinct improvement in our diagnostic acumen, the treatment of malignancies of the bladder remains one of the most unsettled problems of urology.

It is well known that one brutal fact dominates the surgery of cancer: the frequence of its recurrence or of its reinoculation in the sound. The fact that radium, x-ray and diathermy are replacing the methods of excising cancer in accessible regions is significant. Since bladder tumors can be destroyed either transurethrally with an operating cystoscope, or through a suprapubic incision, their management is comparable to the more accessible malignancies that occur in other parts of the body, and as a consequence the same methods of destroying them are applied.

CLASSIFICATION OF BLADDER TUMORS

The following classification as originally proposed by Kuester and Albarran, with an additional modification made by myself, is useful:

I. NEOPLASM.

1. TUMORS OF CONNECTIVE TISSUE ORIGIN.
   - A. *Benign*
     - Fibroma
     - Myoma
     - Fibromyoma
     - Leiomyoma
     - Angioma
     - Rhabdomyoma
     - Myxoma
     - Chondroma
   - B. *Malignant*
     - Sarcoma
     - Fibromyxosarcoma
     - Rhabdomyosarcoma

2. TUMORS OF EPITHELIAL ORIGIN.
   - A. *Benign*
     - Adenoma
     - Papilloma
     - Cystic Tumors

*Read before the Illinois State Medical Society, Moline, May 31, June 1 and 2, 1927.

B. *Malignant*
Carcinoma—
a. Adeno
b. Squamous
c. Scirrhous
d. Papillary

3. TUMORS OF OBSCURE ORIGIN
Hydatid cysts
Dermoid cysts
Cholesteatoma

II. GRANULOMA.

4. TUMORS OF INFECTIVE ORIGIN
Secondary lues—condyloma
Tertiary lues—gumma

About 90 per cent of all bladder tumors arise from the mucous membrane and as a consequence are of the epithelial type. They are—

1. Simple benign papillomata
2. Carcinomata—
   a. Papillary type
   b. Infiltrating type

The trend of opinion today is to consider the majority of papillomata as malignant. The evidence is rather strong in favor of the view that a benign papilloma may, and frequently does, undergo malignant degeneration. After removal of a papilloma the recurrence is often of a malignant type. Operative trauma, either from excision or fulguration (incomplete sparking), seems capable of instigating malignant changes. This transitional tendency, i. e., from a benignancy to a malignancy, which this class of tumors presents is an important factor in determining the method that should be used in destroying them.

Owing to the poor lymphatic supply of the bladder wall, tumors metastasize slowly, but when metastasis occurs it is found in the inguinal and retroperitoneal nodes, the lungs, liver and bones. However, life is most seriously endangered from the infectious lesions of the kidneys produced by the ureteral and vesical neck obstruction.

Location: About 50 per cent of these tumors are found near the ureteral orifices and on the posterior wall immediately back of the trigone. They may be found, however, on practically any surface.

Age: We have been taught that all papillomata are potentially malignant, and that this malignancy increases as age advances. While this is true in a measure, we must not lose sight of the fact that malignancy appears in the young as well as in those of more advanced years.

Symptoms: The cardinal symptom of vesical tumor is hematuria. It has been likened to "a bolt from a clear sky." Its absence, however, does not rule out bladder tumor. The bleeding may be scanty or profuse, and it is often increased by lifting or exercise. When a tumor is situated near the internal urethral orifice bleeding may accompany each act of urination. The voided urine may be light red or coffee-ground in color, the latter being due to bladder retention which allows the clots to disintegrate. When a tumor mass obstructs the internal urethral or either of the ureteral orifices a chronic cystitis, or a pyelonephritis is often the first symptom noted.

In the absence of a positive source of infection the presence of a severe cystitis is often indicative of a malignant condition.

Pain is due to irritation of the nerve filaments by the growth. It frequently occurs early when the tumor is situated near the ureteral openings, because of the abundant nerve supply in this region.

Diagnosis: Cystoscopy is the only accurate method of diagnosing bladder trouble. Perhaps there is no modern diagnostic procedure that is held in such disrepute as is cystoscopy. The average physician is loath to take advantage of this accurate diagnostic procedure for fear of causing additional pain and suffering to the already suffering patient.

It has been our practice to carefully prepare all patients for cystocopic examination as follows: One hour before the procedure is to be carried out a suppository containing one-fourth grain each of extract of opium and extract of belladonna is inserted in the rectum, and one-half hour before the examination one-third grain of pantopon is given hypodermically. Five minutes prior to examination the urethra is thoroughly anesthetized with a solution containing 1½ per cent each cocain and sodium bicarbonate. This alkaline solution enables the cocain to penetrate the mucosa more deeply, with a minimum toxic effect. A cystoscopy performed following this preparation is practically painless. Following the procedure we routinely use the opium and belladonna suppositories every four to six hours for twenty-four hours, which makes the post-cystoscopic period a comfort instead of a nightmare.

The average patient with a vesical tumor, if

seen early, does not look or feel sick. It is only after an attack of hematuria that they become alarmed. During these attacks the patient is fortunate if his or her physician seizes the opportunity to have a cystoscopic examination made and the bleeding investigated, instead of prescribing some placebo which will give the patient a false sense of security until another hemorrhage occurs.

The salient features of a malignant neoplasm of the bladder, as viewed through a cystoscope, are:

1. The transition of a papillomatous tumor into a sessile growth.
2. Early necrosis or erosion of a tumor mass that has not been fulgurated.
3. Presence of accessory tumors slightly adjacent to a central tumor, which may or may not be associated with bullous edema.

It is often impossible in the cases in which a cystoscopic examination is made early to determine whether the papilloma is benign or malignant.

Diagnostic Excision: A biopsy is the only accurate method of determining the benignancy or malignancy of a given tumor. However, the prevention of metastasis should ever be kept in mind in selecting the method for taking tissue for diagnostic purposes. It seems best not to attempt to excise a piece of tumor tissue if the mere excision may be the cause of transplantation metastasis, and the cautery offers the only ideal means of securing tissue for biopsy.

Palpation: No examination is complete without a careful palpation of the mass, if possible, through the vagina or rectum. An apparently benign tumor can often be felt infiltrating the bladder wall.

Treatment: Of all the physical means employed in the destruction of pathological tissue the only certain method is heat. In the attack on the cancer cell with heat we must bear in mind that pathological cells offer less resistance to all destructive agents than do normal cells. This lowered vitality of the cancer cells dominates the whole question of the local treatment of cancer by heat.

In diathermy we have an ideal method of producing heat in the depths of the tissue. Utilized either as desiccation or deep thermo-electric coagulation, it is being used with signal success in destroying accessible malignant growths in all parts of the body by progressive surgeons everywhere. It is my intention to present to you two methods of destroying vesical tumors, both of which have been used for the last nine years by my associate, Vincent J. O'Conor, and myself. We believe that no tumor, whether benign, potentially malignant or malignant should be excised. If diathermy is not available the electrically heated soldering iron is superior to any cutting instrument. The results obtained by us are due to the technic which I will describe.

By means of the special diathermy operative cystoscope and a suprapubic exposure of the bladder, tumors therein situated are as easily destroyed as accessible neoplasms in other parts of the body, and the ultimate cure is in direct proportion to the duration and size of the growth. The earlier the tumor is destroyed the more certain one is of success. As all epithelial new-growths of the bladder are potentially malignant, our aim should be to thoroughly destroy the neoplasm, if possible, at the first opportunity.

From our experience we have formulated the following classification as a guide to treatment:

1. *Benign papillomata* (apparently so on cystoscopic examination). If there are but few papillomata and they are easily accessible, transurethral thermo-electrocoagulation (diathermy) should be employed, using the bipolar method and the diathermy operating cystoscope.

2. *Multiple benign papillomata and tumors inaccessible transurethrally.* Suprapubic cystotomy, followed by thermo-electrocoagulation (diathermy), with the bipolar current, is the method of choice.

3. *Carcinomata.* These tumors are treated by the same method as multiple papillomata, excepting that the diathermy coagulation is carried out more slowly and a wider area of apparently normal tissue is included in the destruction.

4. *Tumors involving the ureteral ostium.* As the ureter passes in a diagonal course through the bladder wall it is possible to "burn it back," destroying the tumor and at the same time preserving the function of the ureter. As a consequence tumors situated near the ureteral ostii are destroyed in precisely the same manner as tumors in other parts of the bladder.

Anesthesia: In the endeavor to keep the patient quiet, fully relaxed and free from pain, we

have found scopolamin-morphin anesthesia ideal for this class of work. As a rule we give 1/6

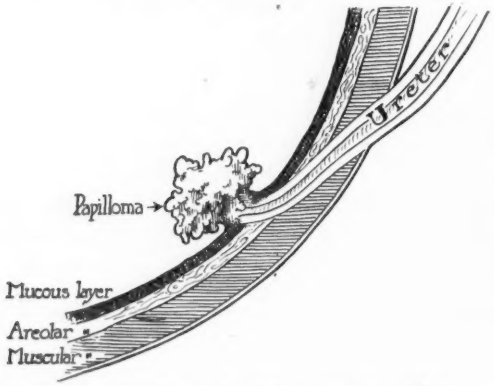


Fig. 1. Papilloma involving ureteral orifice

grain morphin and 1/150 grain scopolamin at 6:30, 7:30 and 8:30, a. m. when the operation is to be performed at 9 a. m. This method of anesthesia allows a slow, deliberate coagulation of the tumor area and repeated washing of the bladder for more careful inspection.

Location of the Tumor in Relation to the Position of the Inactive Electrode

If the tumor is located in the lower half of the bladder we place the inactive electrode beneath the sacrum. If in the upper half of the bladder the inactive electrode is placed over the bladder just back of the symphysis. This permits the passage of the current in a direct line between the active and inactive electrodes, and thus insures better heat penetration.

The tumor, as well as its base and some of the surrounding normal mucosa are "cooked white." In no instance should sparking with resulting carbonization take place, as heat penetration is desired rather than superficial destruction with carbonization, as has been the custom heretofore.

We wish to emphasize that pathological cells offer less resistance to heat than do normal cells, and if we expect to completely and successfully destroy a slumbering malignant growth we must infuse heat into every part of it.

If, after long and careful coagulation, the tumor disappears only to recur after several months no time should be lost in performing a suprapubic cystotomy, followed by a more thorough application of heat with a flat electrode.

Anesthesia: We have found that scopolamin-morphin anesthesia does not work well with young adults, under thirty years of age. Nitrous-oxid is preferable.

With the usual pre-operative preparation a suprapubic cystotomy incision is made and the

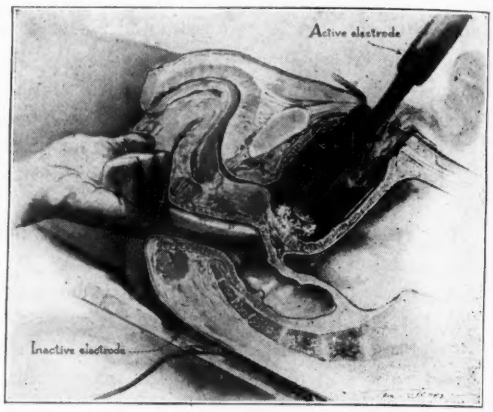


Fig. 2. Suprapubic Cystotomy Thermo-electrocoagulation (Diathermy)

bladder is mobilized as completely as possible. When this is completed the patient is put in the Trendelenburg position and the bladder opened. At this point and from here on every effort should be made to avoid transplanting tumor cells on raw and cut surfaces. Towels should be placed over all open surfaces and kept there until the tumor is destroyed and its base well coagulated.

Destruction of the Tumor. When the tumor or tumors have an elongated pedicle, we have frequently placed a noose around the pedicle, drawn it tight and then severed the pedicle by means of the diathermy knife (active electrode). Later the stalk is treated by a thorough infusion of heat, using a flat, active electrode 2.5 cm. in diameter, taking great care to not only treat the base but to go well outside of any evident tumor growth.

It has been our endeavor to make thermo-electrocoagulation a safe procedure. There is always a question as to how much one dares to coagulate without perforating the bladder wall. We have found that the gloved finger in the vagina or the rectum may be held immediately beneath the tumor and will give a fairly accurate index of heat penetration. When the heat can no longer be tolerated by the gloved finger the coagulation is discontinued. Heat induction may be resumed if the entire area is not sufficiently coag-

ulated, but it must be discontinued as soon as it reaches the extent of tolerance to the gloved finger.

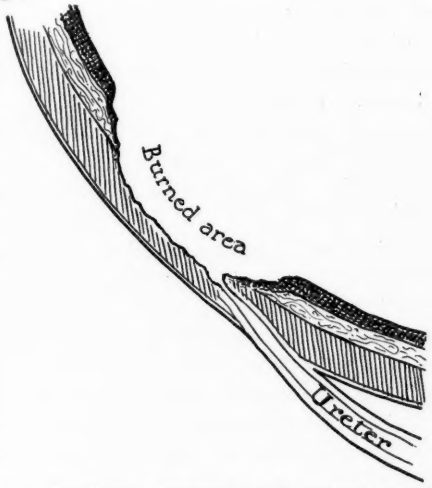


Fig. 3. Papilloma destroyed with ureteral opening "burned back"

All coagulation must be done slowly. Sufficient time must be given to heat not only the part of the bladder wall known to be involved, but also any part that one suspects might possibly be involved.

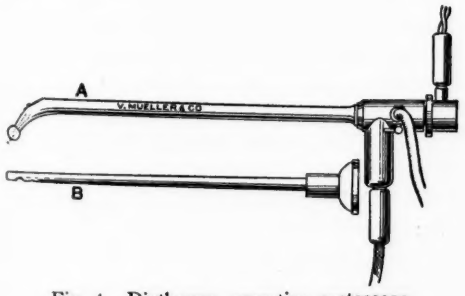


Fig. 4. Diathermy operative cystoscope

Diathermy Machine. The question of an efficient machine is of prime importance in destroying bladder tumors. The small, portable apparatus is usually inadequate where massive coagulation is desired. It is imperative that the machine shall deliver around 800,000 oscillations per second, or a wave length of 375 meters. With proper electrodes for conveying the heat radiation to the part involved the procedure of coagulating the tumor is only a matter of experience.

30 North Michigan Ave.

RESULTS IN THE TREATMENT OF CANCER OF THE BLADDER*

VINCENT J. O'CONOR, M. D.
CHICAGO

In 1919, my associate, Dr. B. C. Corbus, began his work on the electrocoagulation of accessible neoplasms, utilizing the more modern high frequency machine for the procedure. At this time "Diathermy" was coming into prominence in some of the foreign clinics, especially London and Berlin. Although Nagelschmidt and Doyen had been advocating similar methods for some time, other than fulguration, there were but few urologists interested in this procedure in this country and their ideas of technique, suitable instruments and mode of application were at wide variance. The work of these men had attracted but scant attention and had received little or no approbation from urologists or surgeons in general. Other than Corbus the most persistent workers in the general application of this modern thermic destruction of malignancy were Clark of Philadelphia and Wyeth of New York. Kolischer of Chicago was the only other urologist of note interested in this method and he was combining diathermy treatment with radium and roentgen ray therapy.

In 1920 I became associated with Dr. Corbus in this work. Thoroughly discouraged with the results of radical excision, and radiation therapy, I had come to the conclusion that, except for the very rare case of early carcinoma in the dome of the bladder, amelioration of the patient's symptoms was the usual extent of surgical achievement.

Our experimental work with animals and our earlier clinical observations led us to draw certain conclusions which differed considerably from prevailing ideas as to the proper handling of these patients. These conclusions have been summarized in the preceding paper by Dr. Corbus.

Statistical reviews of end results in the treatment of malignancy in general are usually unsatisfactory in that they are never final. One can, however, make certain valuable deductions after a sufficient period of time which enable him to draw definite comparison between both

*Read before Section on Surgery, Illinois State Medical Society, June 2, 1927.

the immediate and remote advantages or disadvantages of various modes of treatment. If honest careful deductions are made over a period of years, one can also conclude as to approximately what is to be expected of a certain method in an average group of patients.

With this intent, I have reviewed and followed fifty patients with carcinoma of the bladder originally seen during the period from May 1, 1919, to July 1, 1926. No cases treated in the past eleven months are included in this report.

While we believe that all papillomata of the bladder are potentially malignant, no case of what is ordinarily considered papilloma not obviously or microscopically undergoing malignant degeneration, has been included in this series. In brief, the fifty patients studied had malignancy of the urinary bladder of varying duration and extent and all were subjected to but one method of treatment: slow, deep electro coagulation of the tumor bearing areas without sparking or carbonization. No supplementary radiation was used.

Sex: Thirty-two were males and eighteen were females.
Age:—
20-30 yrs.— 2 patients.
30-40 yrs.— 6 patients.
40-50 yrs.— 6 patients.
50-60 yrs.—17 patients.
60-70 yrs.—12 patients.
70- yrs.— 6 patients.

Duration of Symptoms: This varied from three days to six years before coming under our observation. The average time from the original hematuria or disturbed urinary function until cystoscopic examination was eleven months. This seems to emphasize the neglect of hematuria as a serious symptom since forty-two of these patients were under a physician's care before coming to us.

Location and Number of Tumors: The tumor bearing areas were classified as single in thirty-three, multiple in eleven and diffusely infiltrating in six. In seven the lateral walls alone were involved; in nine various portions of trigone and lateral walls; in thirty the region of the trigone and bladder floor alone; in three the lateral walls and fundus were involved and in one the growth was confined to the fundus or dome of the bladder.

Involvement of Ureteral Orifices.

Both ureteral orifices were involved or obscured by the growth in five cases; the right ureter in eight and the left ureter in eleven.

Previous Operation before coming under our observation.

Eight of these patients had been operated upon before the present observation. The character of these operations were:

Suprapubic cystotomy with scalpel excision of tumor, 5 cases.

Suprapubic prostatectomy with actual cauterization of tumor, 2 cases.

Suprapubic cystotomy with fulguration of tumor, 1 case.

Procedure of Treatment: Nine cases had transurethral treatment only; seven cases were subjected to a combination of transurethral and suprapubic treatment and thirty-four had suprapubic diathermy alone.

It is our custom after suprapubic coagulation of a vesical tumor to institute routine cystoscopic examinations at frequent intervals. After eight or ten weeks any area suspicious of malignancy is immediately subjected to thorough transurethral diathermy.

Operative Mortality: There were four hospital deaths in this series:

1. Forty-eight hours postoperative dilatation of stomach.
2. Forty-eight hours postoperative bilateral ureteral occlusion and uremia.
3. Seventy-two hours postoperative (after transurethral diathermy) cerebral embolism.
4. Ten days postoperative from myocardial insufficiency.

The immediate operative mortality, therefore, was 8 per cent.

The remaining forty-six patients I have classified as:

A. Unsuccessful as to cure.

B. Patients symptomatically and objectively well.

Uncured Cases: These comprise twenty-six patients. Twenty have died and six have had inoperable recurrence or metastases.

The length of life after operation varied as follows:

Seven to nine months:	2 patients.	
Nine months to one year:	6 "	(2 still living.)
One year to sixteen months:	7 "	(1 still living.)
Sixteen months to 20 months:	8 "	(3 still living.)
Two years or more:	3 "	

Patients Apparently Well: Of this series, there are twenty patients symptomatically well and with negative cystocopic findings.

Duration of Freedom from Recurrence.

More than:

8	years—	1	patient
7	"	1	"
6	"	2	"
5	"	4	"
4	"	2	"
3	"	4	"
2	"	2	"
1	"	3	"

All of these patients have been examined cystoscopically during the past three months. The majority have been examined every three to six months since operation.

Of the 20 cases in which no recurrence has taken place, all were clinically and objectively malignant. Of these, fifteen were verified by microscopic examination. Sixteen of the 20 cases had trigonal and ureteric orifice involvement. In 13 patients, one or both ureteral orifices were involved in the coagulated area. In one instance, the resultant cicatrix caused complete occlusion of the ureter necessitating nephro-ureterectomy 2 years later. This patient is alive and well, 5 years after operation. In 3 other patients it was necessary to progressively dilate the ureter to prevent stricture at the orifice. The remaining nine patients had patulous "burned back" ureteral orifices.

Postoperative Complications from the Coagulization Effect.

In one patient there was a profuse postoperative duodenal hemorrhage 48 hours after coagulation of an extensive infiltrating tumor. This, we believe, to be due to an acute ulceration comparable to that occasionally seen in extensive cutaneous burns. This patient recovered after transfusion and dietary management and is living and well more than 4 years after operation.

In only one patient was the bladder wall perforated. This man developed a vesico-rectal fistula ten days postoperative and succumbed to general sepsis and myocarditis.

The most important postoperative complication to be avoided is that of sealing off the ureteral openings. This occurred in two patients and was the direct cause of death in one of them.

One of the most noteworthy results of diathermic treatment in tumor of the bladder as compared with excision or radium is the postoperative comfort of the patient. Whereas in our experience radium and resection decrease the bladder capacity and increase vesical irritability, diathermy brings about an increased bladder capacity and lessened irritability. The hospitalization of these patients is shortened, the suprapubic incisions heal in from 12 to 21 days and the immediate bladder function, whether subsequent recurrence of tumor occurs or not, is a distinct relief to the patient as compared with the older methods.

Of the 20 patients classified as "apparently cured" the smallest bladder capacity is six ounces and practically all have regained normal capacity and are free from distressing urinary symptoms.

I wish to cite a few case histories, descriptive of the successful management of these cases:

Case 1. Mrs. I. P., aged 36 years, housewife, was referred by Dr. Danforth on May 1, 1919. She gave a history of frequent urination and dysuria for the past fourteen months. Bloody urine had persisted for three months. General health otherwise excellent. cystoscopy showed a papillary tumor 6 cm. in diameter just about the right ureteral orifice. The apex of the tumor showed definite necrosis and the mass was surrounded by diffuse ulcerations. At the base of this tumor, but posterior and superior to this region were four papillary tumors about 0.5 cm. in diameter.

Transurethral fulguration of these tumor-bearing areas was performed repeatedly from May until September. During this time there were many slight hemorrhages and finally a rather profuse one occurred so that it was deemed advisable to open the bladder and deal more radically with the tumors. Operation was performed on October 23, 1919, at the Evanston Hospital. A suprapubic cystotomy under gas and oxygen anesthesia was performed. Massive coagulation by diathermy and the largest growth was removed at its base with the actual cautery, followed by diathermic coagulation. Microscopic diagnosis (Dr. J. L. Williams) was papillary carcinoma of the bladder. Convalescence was uneventful, the patient urinating normally on the twentieth day. This patient is absolutely well, bladder capacity is normal and she has had no recurrence as indicated by normal systoscopic findings and her continued excellent general health. It is now seven years and eight months since operation.

Case 2. Maria G., aged 61 years, housewife, was referred by Dr. John G. O'Malley on November 5, 1921, complaining of frequency of urination for ten years. Hematuria for three years. Two years previously she had a suprapubic operation at Mercy Hospital, with excision of "papilloma" and cauterization of the base. Profuse hemorrhage recurred in three months. The patient stated that she could no longer tolerate her condition. Urination every few minutes was accompanied with severe pain. Her general health was excellent. Plain x-rays showed no evidence of bone metastases. Cystoscopy showed a bladder capacity of one ounce. The bladder was filled with tumor

masses, ulcerating and necrotic and there was marked bulbous edema everywhere.

Operation on November 10, 1921, at the Washington Boulevard Hospital under gas and oxygen anesthesia, A transperitoneal approach to the bladder was necessitated owing to the previous operations. When the bladder was opened, tumor tissue was evulsed into the entire wound; this occurred in the manner in which the fruity part of an orange would be expelled when the peeling was pressed upon. It seemed futile to attempt any procedure with these extensive tumor mass areas and in the presence of such a markedly contracted bladder. However, all of the accessible masses were coagulated with a very high degree of heat. At the completion of this procedure, the interior of the bladder was so hot that it was with difficulty that the gloved finger could be held therein.

Microscopic diagnosis (Dr. Mary Lincoln) was papillary carcinoma of the bladder. The patient made an excellent operative recovery and left the hospital in three weeks with a bladder capacity of three ounces. Cystoscopy at this time showed two necrotic, papillary masses on the left floor of the trigone about the left ureteral orifice.

Transurethral diathermy was administered on three occasions. At the end of one month, after the last coagulation, the patient returned, stating that she was in splendid health and that she could retain the urine four hours without voiding. Cystoscopy showed that the area of previous involvement that had been treated had healed completely and that there remained only one area of tumor growth. This was situated on the antero-superior wall just above the internal vesical orifice and was inaccessible to any transcystoscopic manipulation.

Because of the exceedingly remarkable improvement and the fact that this patient was symptomatically well after what appeared to be an utterly hopeless case, we decided to make a final attempt to destroy the last apparent bit of cancer tissue, since there was no evidence of metastasis.

Operation was performed on March 23, 1922, under scopolamin and morphin anesthesia. A very difficult transperitoneal cystotomy was done and the contracted bladder opened above in such a way that the carcinomatous area at the bladder neck was thoroughly coagulated by diathermy. The patient made a good recovery and has enjoyed excellent health ever since. She now has a bladder capacity of fourteen ounces, both ureters have been "burned back," but although large and gaping, they have good ejectile tone. She voids once at night and from four to five times each day.

Cystoscopic examination on May 9, 1927, showed no evidence of recurrence. It is now five years and three months since the last operation.

Case 3. John B., aged 68 years, glass cutter, referred by Dr. Torpey, always in good health until June, 1921, when he had an attack of profuse painless hematuria. No further trouble until June, 1922, when the hematuria recurred.

Cystoscopy on June 25, 1922, showed a very large, sessile, papillary tumor occupying the entire right trigone and obliterating the right ureteral orifice.

Operation at the Evanston Hospital on June 30, 1922. A suprapubic cystotomy under scopolamin and morphin and local anesthesia. The entire tumor-bearing area was coagulated very slowly by high current diathermy.

Microscopic Diagnosis: (Dr. J. L. Williams) Papillary carcinoma of the bladder.

Convalescence was uneventful. Patient has been perfectly well with the exception of acute right pyelitis four months after leaving the hospital. At that time it was found that the ureteral orifice was constricted by the scar tissue, causing a temporary obstruction. This area was slit with an operating transcystoscopic scissors and subsequently dilated with ureteral bougies and no further trouble of this nature has resulted.

At the present time the patient is in excellent health and there is no sign of local recurrence as evidenced by cystoscopic examination on April 15, 1927. Present bladder capacity is six ounces. Nocturia once or twice. It is now five years since operation.

Case 4. Ella S., aged 48 years, housewife, was referred by Dr. S. Slaymaker January 15, 1923, complaining of intermittent hematuria for the past nine years. During this time her family doctor had been treating her for "papilloma of the bladder" by washing out the viscus with antiseptic solutions. Recent developments of pain and frequency made her seek further advice. Her general health had been excellent.

Cystoscopy showed an infiltrating necrotic tumor invasion of the floor and lateral wall of the bladder just posterior to the left ureteral orifice but not directly involving it. This mass occupied a segment of bladder equal to one-quarter of its circumference.

Vaginal examination showed a hard indurated mass in the region described above, but there was no encroachment on the anterior vaginal wall. Plain x-rays showed no evidence of bone metastases.

Operation was performed at the Washington Boulevard Hospital on January 20, 1923, under scopolamin and morphin anesthesia. A suprapubic cystotomy was done transperitoneally because of the adherency of the peritoneum over the entire left lateral bladder wall. It was possible to free this entire mass to the extent of making it accessible to deep slow coagulation by diathermy. It was obvious that the only way to destroy this growth was to coagulate it en masse and let it slough out.

Healing was completed on the fortieth day postoperative.

Microscopic Diagnosis: (Dr. Mary Lincoln) Scirrhous and papillary carcinoma of the bladder.

This patient is absolutely well and without recurrence. Bladder capacity is fifteen ounces and she has no urinary symptoms.

Cystoscopy on May 10, 1927, showed normal bladder with normally functioning ureteral orifices. Patient now weighs forty-two pounds more than before operation. It is now four years and five months since operation.

These case histories are recited in detail to

show the persistence necessary, both on the part of the surgeon and the patient, to effect satisfactory end-results.

In Conclusion. Fifty patients with carcinoma of the urinary bladder have been carefully studied and followed clinically over a period of eight years.

While the number of patients is not large, the series is rather typical of all groups of these cases. Only one method of treatment was used in the management of these patients. Thorough, slow, deep electro-coagulation commonly known as "diathermy."

There were four immediate operative deaths—a mortality of 8 per cent.

Twenty patients are living and well without evidence of recurrence after periods varying from one to eight years. An ultimate clinical success, at least for the time being, in forty per cent of the patients.

We believe that diathermy offers a more satisfactory means of combating malignancy of the bladder than any other therapeutic procedure, not only for relieving the patient symptomatically and prolonging his life, but with a definitely measured hope of complete cure in a large percentage of cases.

30 N. Michigan Ave.

DISCUSSION ON DR. CORBUS' AND DR. O'CONOR'S PAPERS

Dr. John Wolfer, Chicago: I would like to ask a question. I know nothing about genito-urinary surgery, but I do know that in treating carcinoma elsewhere, one of the things we are afraid of, as far as local treatment is concerned, is the dissemination of the tumor. I understood Dr. Corbus to say that, due to the rather restricted lymphatic drainage of the bladder, metastasis are late. I would like to ask if the group of early cases of microscopically proven carcinoma yielded better results—that is if they had no recurrence, such as liver or bone metastasis—than the late cases? We have had a considerable amount of controversy regarding carcinoma of the breast, but, of course, carcinoma of the breast is a different thing from carcinoma of the bladder. Usually our recurrences are not only local recurrences but systemic recurrences.

I wish to compliment the men on their work, because the cure of that high percentage of carcinomas of the bladder is to me a very marvellous thing. I can readily see that they are doing a very wonderful piece of work and I wish to thank them.

Dr. Ciney Rich, Williamsburg, Ia.: I would like to know, aside from this, what they are doing with inoperable carcinoma of the prostate with diathermy.

Dr. Corbus, in response: Regarding the question concerning the treatment of carcinoma of the prostate, we have advocated the method of perineal prostatotomy with coagulization through the perineum. But we have found that a simple suprapubic cystotomy followed by coagulation of the prostatic cancer suprapubically and removing the coagulated mass with a rongeur gave us much more satisfactory results than any method we have had.

I think at the present time the treatment of carcinoma of the prostate is the only great bugbear we have to deal with. Some of our confreres are recommending radium and some of them are excising the vesicle neck together with the cancer of the prostate, the simple procedure of doing a suprapubic cystotomy and leaving the patient alone, is just as good as where more surgery has been done. The only thing favorable about carcinoma of the prostate is that it is securely held by its capsule like your finger inside of a glove, and the only way the prostatic cancer can get out is to go up toward the seminal vesicles. There are plenty of pathological reports to show that four or five years have elapsed before there was any metastasis in the bone, lungs, etc., where no treatment of any kind was instituted, and the usual consensus of opinion, I think, is that a simple suprapubic cystotomy will give about as good end results as any method we have.

Dr. O'Conor, in response: The question of dissemination of the tumor is the most vital one in the treatment of malignancies of the bladder, just as it is elsewhere. This is the one thing which possibly led us to discontinue trying to resect even those cases of carcinoma which were favorable for resection, because of the fact that recurrence somewhere in the resected area is quite frequent or distant metastasis occurred during the following year or two.

I have had considerable experience with the excision of bladder cancers in a large clinic over a period of five years and I don't recall other than two favorable cases which were followed during that period, and both of these were early papillary carcinomata in the dome in such a position that they were very easily widely resected.

One thing which diathermy does—that is, with slow coagulation, there is a complete occlusion of the vessels and lymphatics. Theoretically, at least, any chance of tumor cells getting out of that region and into the general circulation certainly is completely eliminated with the slow destructive effect. Where you spark the tumor, where you bombard it with the current, the reverse is true.

The question of treating bladder cancers and claiming that any of them are cured, of course, is like treating a cancer anywhere else. We don't claim that this 40 per cent. of patients are cured, but we have evidence as far as we have gone, that they are well. For instance, when a woman comes to you that has been operated on twice elsewhere, first with excision and then with the cold cautery suprapubically, and you find the bladder capacity 2 oz. and the woman sits on the urinal all the time, you feel that case is hopeless. But you go in there and see what seems to be a useless operation, as we have done in several instances, have

gone into the bladder filled with cancer, and we thought that there was no hope in the world for the patient, and then find that patient sloughing that tissue out and gradually reconstructing the bladder, and you cystoscope her later and find a bladder containing four or five ounces where it only held two before, and possibly just a small papillomatous area of malignant looking tissue which you destroy transuretherally and gradually that woman, over a period of four, five, or six, or seven years, has a good functioning bladder which holds ten, twelve or fourteen ounces, and no evidence of metastasis elsewhere, you begin to feel that there is some hope in a certain percentage of these cases.

Regarding the size of the tumor in metastasis, I didn't go into the question of distant metastasis in this paper as I should have done, although our record on some of the uncured cases as to their later metastasis was difficult to obtain because many of them were from out of the city or from distant parts of the country and it was hard to get a record of what actually happened to them.

A thing that impressed me about this thing is this, that the small infiltrating tumor is often one that seems to be very, very favorable, often this tumor recurs immediately after coagulation, the patient develops either a lumbar metastasis or liver metastasis or distant metastasis. Patients come to us with half of the bladder filled with a great necrotic, ulcerating tumor, and we do a cystotomy and spend an hour or two destroying that tumor and figure, of course, that you are doing nothing to palliate that patient's condition, and you will find that patient living five or six years afterwards without any evidence of recurrence elsewhere, where the patient before that had a small papillary cancer maybe in the same location only as big as the end of your thumb, develops evidence of distant metastasis at a later date.

The only thing that helps us in this work, different from treating carcinoma elsewhere, is the point Dr. Corbus has made, that the lymph supply of most portions of the bladder is very, very scant, and that is why we believe with Dr. LeCount, when he says that is the reason that we are able to get many of these cases and cure them before they have metastasized outside of the bladder. Naturally if the tumor cells do get outside of the bladder before we get after them, the cases are hopeless.

We have had this happen. We have had three or four of these cases, that have had absolutely normal bladders, so to speak; that is, the local carcinoma is held in fibrous tissue produced by the coagulation. They have had good bladder function and later died of malignancy of the lumbar glands. So that there is no rule in the cases we have had as to what you can expect from the size of the tumor.

Now, as regards Broder's classification of 1, 2, 3 and 4 malignancy, we have gone into that fully. We checked up on it as a matter of interest, and so far we don't know that there is any definite way of saying, as they do at Rochester, "Well, here is a case of bladder cancer Type 1 which is very favorable," or "Here is a case of type 4, and there is no use of doing anything about it because, no matter what you do about it, the patient will die anyway." It may be that there is more to that than we believe, but we haven't been able to correlate our symptoms with the pathological findings as to Broder's degrees of malignancy.

PHRENECTOMY*

RALPH BOERNE BETTMAN, M.D., F.A.C.S.

Attending Surgeon Chicago Winfield Tuberculosis Sanitarium and Michael Reese Dispensary, and Associate in Surgery, Northwestern University Medical School

CHICAGO

Rest is one of the most important factors in the treatment of tuberculosis. This applies not only to rest of the individual as a whole, but to immobilization of the local site of infection. In tuberculosis of the knee or spine local rest is obtained by the application of a cast. In tuberculosis of the lung rest is obtained wherever possible by immoblization of the lung.

Compression is one of the most important factors in the treatment of cavities of the lung, of either tuberculous or nontuberculous origin. It is a well known fact that an infection in an unobliterable cavity is extremely chronic. Healing of the infection of any cavity takes place usually only after the cavity has become obliterated, either by the ingrowth of granulation tissue, shrinkage due to scar tissue, or mobilization of the wall of the cavity itself. This is true not only of the lung but of the body in general, to wit, ostemyelitic cavity, empyema cavity, infection of one of the sinuses of the face, etc. In case of a single lung abscess it is frequently possible to drain the cavity and then allow for the obliteration of the cavity either by means of granulation or by plastic procedures on the walls of the cavity. In the case of multiple cavities of the lung, or in the case of bronchiectasis simple drainage is of very little avail. Here, however, much can be done to obliterate the cavities, by collapsing the affected lung.

Both rest and obliteration of the cavities of the lung are obtained when that lung is collapsed. Collapse of the lung can be produced by three following procedures: 1, artificial pneumothorax; 2, phrenectomy; 3, extrapleural thoracoplasty.

Inasmuch as the subject of my paper is pri-

*Read before the Section on Surgery, Illinois State Medical Society, Moline, June 2, 1927.

marily the subject of phrenectomy, I will dismiss the other two of the aforementioned procedures with the following sentences. Artificial pneumothorax is the simplest of the three procedures and should always be attempted first. If artificial pneumothorax cannot be carried out because of the presence of pleural adhesions, phrenectomy should be next considered. Extrapleural thoracoplasty is only justifiable in those cases in which neither artificial pneumothorax or phrenectomy can bring about the desired collapse and immobilization.

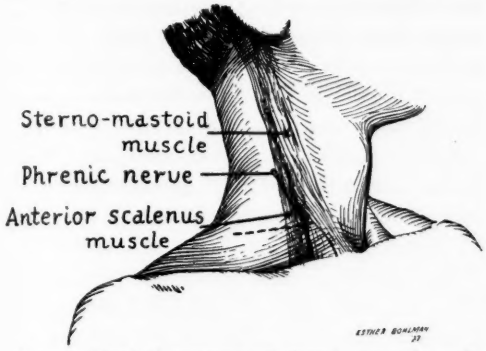


Fig. 1. Surgical anatomy of phrenic nerve in neck.

The operation of phrenectomy, or better phrenico-exeresis—evulsing part of the phrenic nerve—has as its aim the unilateral paralysis of the diaphragm. When the diaphragm is paralyzed the diaphragmatic muscle loses its power of contraction and its tone. And the forces of intra-abdominal positive pressure and interthoracic negative pressure push and pull the diaphragm upward into the chest cavity until it occupies a position of extreme expiration. In this position it remains, moving almost not at all. The size of the thoracic cavity is thus encroached upon and the movements on that side are diminished. Thus, both compression and partial immobilization of the lung are obtained.

The entire motor innervation of the diaphragm is through the phrenic nerves. Each nerve controls the motion of the homolateral half of the diaphragm. There is apparently no cross innervation, nor is there any motor innervation from the contiguous intercostal nerves. The phrenic normally arises from III, IV and V cervical roots, occasionally branches come from C VI, C VII, C VIII and even T I. These branches are apt to join the main branch of the nerve in the mediastinum in the form of an accessory or accessory nerves. The phrenic nerve proper after being formed by the union of the branches of the three cervical roots courses outwards, curves over the lateral border of the scalenus anticus muscle, crosses the muscle from without inwards in a diagonal direction, extends downwards into the mediastinum where it is joined by its accessory nerves, courses over the lateral surface of the pericardium, and then branches to distribute itself to the homolateral half of the diaphragm. At the place where the phrenic crosses the scalenus anticus muscle, it becomes accessible to the surgeon.

Simple section of the phrenic nerve will not cause a complete paralysis because the nerve fibers running in the accessory phrenic will not be interrupted. Partial paralysis only will be caused. Crushing the phrenic nerve with the hemostat or freezing it or injecting alcohol into it, will cause a temporary partial paralysis. Evulsing the phrenic so that the fibers in the accessory phrenic nerves are injured will cause a complete and permanent paralysis.

The paralyzed diaphragm assumes a position which is about two or two and one-half inter-

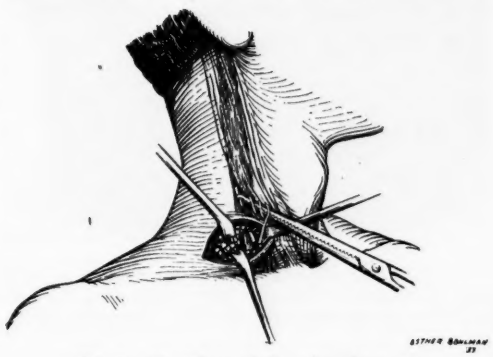


Fig. 2. Evulsion of the phrenic nerve.

spaces higher than its normal position. The amount of diminution of volume of the interthoracic space by this rise of the diaphragm in an adult varies somewhere between about 400 to 600 cubic cm. As the diaphragm muscle atrophies following loss of its motor innervation the position of the diaphragm may be even slightly higher. In cases in which there are no pleural adhesions or in which the mediastinum has not been stabilized by a chronic infection, it is probable that this diminution in the thoracic space is immediately divided between the two halves of the thoracic cavity by bulging of the medias-

tinum. However, depending upon the degree of fixation of the homolateral lung or the mediastinum, the diminution of space affects the lung on the paralyzed side.

Changes in the intra-abdominal or intrathoracic pressure affect the positions of the diaphragm so that there may be excursions during respiration, during fits of coughing, or at times of abdominal pressure. Thus the immobilization of the diaphragm is only comparative. During the cycle of respiration the paralyzed diaphragm may move in the following ways. On inspiration

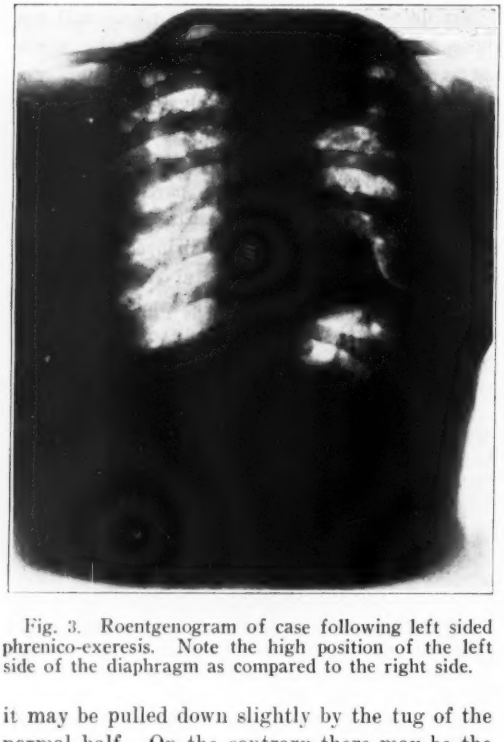


Fig. 3. Roentgenogram of case following left sided phrenico-exeresis. Note the high position of the left side of the diaphragm as compared to the right side.

it may be pulled down slightly by the tug of the normal half. On the contrary there may be the so-called paradoxical motion in which the diaphragm is sucked upwards into the thoracic cavity by the increase of negative pressure. Lastly, it may remain practically immobile due to the counteraction of the above mentioned forces, due to adhesions, or to the fact that changes in pressure are so slight as not to affect it.

The noticeable effects on the patient after phrenico-exeresis as far as it affects his ability to carry on the physiological act of respiration is concerned, is nil. The interplay of abdominal and thoracic phases of respiration are so beautifully balanced that the abolition of the diaphragmatic contracture in one side causes no disturbance whatsoever. At first thought, it is surprising that following phrenectomy the act of coughing should not be difficult. Coughing is usually much easier than it was before and this can be explained by the fact that the abdominal muscles play a most important part in coughing, and that the obliteration of any diaphragmatic muscle spasm allows these muscles freer play. The fact is that as a rule one of the first benefits the patient notices is that "it is so much easier to cough."

The indications for phrenico-exeresis, as I said before, are to obtain rest and collapse of the affected lung. In a large percentage of cases in which artificial pneumothorax should be done, pleural adhesions have developed, thus making collapse of the lung by the injection of air impossible. In these cases paralyzing the diaphragm can be counted as equivalent of about 500 cc. of air. If the lesions are only in the upper lobes and if these lobes are firmly held to the chest walls by adhesions, it is doubtful if paralyzing the diaphragm will have much or any affect. If, however, the lesions are situated in the lower lobe, then the adhesions would not only act as counter pressure to the rising diaphragm but would also stabilize the mediastinum, so that the affected portion of the lung would be well collapsed and immobilized. It is in this type of case that the benefits from phrenectomy are most striking. Phrenectomy therefore is indicated where artificial pneumothorax can not be used in those rare forms of pulmonary tuberculosis in which the lesions are confined to the major portion of one lung, in unilateral bronchiectasis which is almost invariably situated at the base, in multiple unilateral lung abscesses, in single lobe abscess of the base which for some reason or other is not amenable to drainage. Phrenectomy is also of great value in certain plastic operations on the lower part of the thorax.

The technic of phrenectomy or phrenico-exeresis is simple. Under local anesthesia an incision is made about 4 cm. above the clavicle, starting near the lateral margin of the sternocleido-mastoid muscle, which can be easily palpated, and extending laterally parallel to the clavicle for a distance of about 4 cm. The incision extends through the skin and the platysma muscle. It

may be necessary to ligate and cut the external jugular vein. The cervical fascia is cut, the outer border of the mastoid muscle is retracted medialward and with blunt dissection the fat pad covering the anterior scalenus muscle is dissected exposing this muscle. Care must be taken not to injure the arteries of the thyroid axis, the large veins, or on the left side, the thoracic duct. When the scalenus anticus muscle is exposed the phrenic nerve will be found coursing diagonally across it from without inwards. The fascia over the scalenus is cut and the nerve is grasped with a hemostat. Pinching the nerve may cause a diaphragmatic spasm accompanied by slight pain. If only a temporary partial paralysis of the diaphragm is wanted, the phrenic nerve may now be crushed, frozen, or injected with alcohol. However, for complete and permanent paralysis the nerve must be evulsed. This is done by cutting the nerve proximal to the hemostat and then evulsing the nerve by slowly turning the hemostat in such a way that the nerve is wound around it. From three to six inches should be evulsed. By doing this not only is the phrenic nerve itself injured but the accessory branches are destroyed. The diaphragm will become paralyzed immediately, assume its high position and may be immobilized. The skin wound is closed with three or four skin clips, without drainage. No special aftercare is necessary. The patient continues to be ambulatory.

SUMMARY

The operation of phrenico-exeresis consists in interrupting the course of the phrenic nerve by locating the nerve in the neck where it crosses the scalenus anticus muscle and evulsing it.

The result following phrenectomy is a homolateral paralysis of the diaphragm, causing a high position of the diaphragm, and a practical immobility.

Phrenectomy may be indicated in unilateral tuberculosis, lung abscess, bronchiectasis, or unilateral pulmonary hemorrhage, where artificial pneumothorax would be indicated but cannot be used. It is also frequently used along with other plastic procedures, such as extrapleural thoracoplasty.

Paralysis of the diaphragm, in short, with its resultant high positior and immobilization tends to compress and immobilize the lung on the same side; this is especially true in those cases in which adhesions tend to immobilize the mediastinum.

DISCUSSION

Dr. Earl D. Wise, Champaign: The interesting trend of thought that this paper brings up is the way that the surgical treatment of pulmonary tuberculosis has been developed. It is only in recent years that the sanitorium doctors have called upon the surgeons for any help in the treatment of this disease. One of the newer of these surgical procedures is that which Dr. Bettman has advanced, that of phrenectomy. There have been many reasons advanced for the use of this surgical procedure; nevertheless, I think we should not be too hastily carried away, thinking it would tend to be a cure-all for tuberculosis. We have used this as an aid in pneumothorax. You get rest of the lung more completely and uniformly and it tends to keep out the irritating cause due to basal adhesions. I might say that there is practically no contraindications to this operative procedure. The only think I can think of that any operative procedure is needed at all would be in advanced lesions in the opposite lung.

The surgical procedure is simple. The nerve is so easily found and it is done under local anesthesia so completely. It is easy to recognize the nerve by grabbing hold of it with the forceps and you get the impulse of pain in the shoulder, and that is one way of recognizing the nerve.

We have used this method of exeuresis in preference to merely cutting out a section of the nerve, because it does away with our necessity of recognizing the accessory phrenic nerve.

Twisting the nerve must be done very slowly—just a revolution in something like half a minute or a minute.

In conclusion, I would say that this a newcomer in the surgical treatment of tuberculosis. And, while it is too new to pass final judgment on, it really offers an aid in getting lung compression and lung rest in these cases.

I wish to express my appreciation to Dr. Bettman for having heard the paper.

THE HEALING OF PEPTIC ULCER*

KARL L. THORSGAARD, M. D.

CHICAGO

The problem of healing of peptic ulcer has a never abating interest because a large part of the population of the United States are afflicted with dyspepsia in one form or another, and of this the majority doubtless have some definite lesion in the gastro-intestinal tract.

The clinician in dealing with peptic ulcer confronts certain difficulties, even after the diagnostic obstacles have been overcome, most of which center around the management to insure healing

*Read before the Section on Medicine, Illinois State Medical Society, Moline, May 31, 1927.

of the lesion and permanent symptomatic relief.

These difficulties are enhanced when one bears in mind the rather confusing course frequently seen in peptic ulcer, spontaneous remissions and intervals of comparative well-being occurring irrespective of the severity or type of lesion and without regard to therapy.

It is generally known that certain ulcers do not produce any symptoms likely to attract attention to their presence, so that in obtaining histories of recent disease we are never certain that a definite pathologic lesion has not existed for a long time. From this it can readily be appreciated that statistics based on symptomatic relief and subjective improvement are necessarily misleading, for we know from the behavior of ulcers that favorable subjective response is not always synonymous with repair.

It is necessary to refer briefly to the etiology and underlying pathology of ulcer before considering some of the factors which promote healing as well as those that retard healing.

Etiology and Pathology.—It is rather unfortunate that modern scientific research still leaves us in uncertainty as regards the etiology of peptic ulcer, but this status must not be allowed to act as a deterrent to clinical investigation.

As a working hypothesis we can assume with a reasonable degree of scientific accuracy that in ulcer we have to deal with a biochemical change affecting the highly specialized cell concerned in the process of digestion in a manner to lower resistance to external influences of a character to initiate the changes which result in ulcer formation. The acceptance of a dormant cellular fault as the underlying factor of cell response to trauma, renders lucid our understanding and the proper evaluation of the relation of these influences to ulcer production. Perhaps we can phrase this theory better by stating, that in individuals with normal cells dietary indiscretions are negligible factors, but vitamin deficiencies in relation to cell chemistry assume significance as a possible specific factor in cell vulnerability. To this must be added the anatomical and nutritional peculiarities of that area in which ulcer formation is most often encountered, peculiarities which are conducive to stagnation, chemical and mechanical trauma, on the basis of which bacterial invasion aided by neurogenic and systemic influences increase irritation with a resultant histological defect.

It is admitted that all these factors in themselves are not sufficient to produce demonstrable ulcer in a healthy mucosa, but when these factors are brought to bear on a potentially defective cell, disintegration and necrosis are almost certain to take place. We can narrow all that has been said down to an axiom: Two fundamental factors are responsible for ulcer formation, namely, cell susceptibility and cell irritation.

Once a defect in the wall of the digestive apparatus has been established, the outcome is uncertain. Resolution and spontaneous healing are not impossible, but the clinician, as a rule, sees only such cases which have a progressive tendency, resulting in marked perversion of function due to structural damage of the stomach and adjacent viscera. This type of cases gives rise to a symptom complex, which is not easily interpreted or controlled, all of which is apt to produce confusion with the inevitable diagnostic and therapeutic pitfalls.

Factors That Hinder Healing.—Ulcerous erosions in the wall of the stomach or duodenum produce incoordination of the muscular contractions, abnormal peristalsis, spasms, secretory disorders, impairment of gastric motility and consequent stagnation and delay in evacuation time. Chemical and mechanical irritation as a result of prolonged stagnation is the greatest known local factor in the hindrance of healing of peptic ulcer. When infection is active in the process, it adds to the delay in healing, and plays an important rôle in the chronicity, complications and recurrence of ulcer. In the presence of extensive pathologic changes and permanent structural damage, mechanical aid is necessary before healing can take place.

Susceptibility of the involuntary nervous system and factors that influence autonomic irritability add to the delay in healing. Here again an inherent fault is kept in mind as a possible underlying cause. We know that one's comfort and well-being depend largely on vasomotor stability and the impulses transmitted by the sympathetic nervous system. Fear and anxiety complexes can initiate impulses detrimental to vitally important organs and cause alarming symptoms which will upset the whole organism.

Allergic reactions as well as those of anaphylaxis acting on a susceptible autonomic nervous system can produce similar disturbances. One is familiar with the emotional aspects of peptic ulcer and the possibility of an allergic influence in autonomic irritability, but in the absence of a constitutional fault considerable speculation exists in regard to the degree of activity of these influences.

Faulty food, overeating, overweight and the use of excessively hot or cold drinks, sedentary habits and constipation cause more dyspepsia than all other factors. The American people drink more ice water than all other nations of the world combined. Poisonous alcoholic concoctions consumed by the people of this country have materially increased the incidence of digestive disorders and allied conditions, many of which are directly traceable to the Prohibition Act. Deaths from alcohol in Cook County alone in 1926 increased 474 per cent over a similar period of pre-prohibition time.

In connection with the failure of healing of ulcer the possibility of cancer must be kept in mind. In a cancerous family history, any dyspepsia of short duration and definite onset, without previous attack, progressive in character, with a delay in evacuation time that cannot be controlled is potentially cancerous. A mild dyspepsia may be the factor to activate a dormant susceptibility to cancer.

With a biologic conception of the origin of cancer and our understanding of the significance of continued irritation, attention is called to the importance of the family history as regards the procreation of the race and the prolongation of life. In an individual, then, with a family history of cancer, one's attention should be focused on the areas where irritation is known to occur, and preventive measures during the precancerous stage should be instituted.

Full realization of the possibilities of prevention will reduce the incidence of the dyspepsias, including ulcer and cancer, and careful scrutiny of the dyspepsias in the early stages, with proper management will tend to prevent irreparable functional and structural damage to the important organs of digestion.

In a program of intensive health conservation many deaths could be prevented and many lives salvaged by raising health ideals, by improving habits of living and by periodic health examination.

Factors That Promote Healing.—Peptic ulcer heals in one or two ways: First, by primary intention if the ulcer has been successfully excised; second, by secondary intention, through the formation of granulation tissue; epithelization of the edges and scar formation. As comparatively few ulcers are excised and still fewer removed by resection the majority recover by the formation of granulation tissue. It is well to remember that it is nature that heals the ulcer and our object in therapy is to assist nature by placing the parts in a condition favorable to healing and by giving her an opportunity and sufficient time to effect healing with a firm scar. At times nature accomplishes this result without artificial aid. At other times it taxes the ingenuity of even the most resourceful clinician.

The outstanding indication for the healing of ulcer is bed rest and an accurate control of the adverse factors that influence digestive activity. During the period of intensive observation, attention is focused on the progress of repair and preservation of function irrespective of subjective response. Careful consideration is given to the human side of the patient, his emotional make-up, and to such contributory impairments as retard healing, in addition to concentration on the local conditions. Special effort is made to individualize the control to meet the indications in terms of etiology, morbid physiology and morbid anatomy.

The dietary regimen of healing includes a sustenance diet that will maintain nutritional equilibrium with due regard to the function and tolerance of the stomach. Emphasis is placed on the importance of *frequent* feedings with soft, bland food of the shortest possible evacuation time and, also, to provide an excess of fluids to combat the toxic effects of dehydration and starvation. Cod liver oil and other vitamin containing foods are added to the dietary as soon as the digestive activity is controlled.

During the time of hospitalization, as well as in the follow-up plan, accurate neutralization of the gastric contents is maintained throughout the entire twenty-four hour period, and sufficient tubings are made to enable one to have personal knowledge that this requirement is complied with. Calcium carbonate has largely supplanted

the customary alkalies as an aid in controlling gastric acidity.

Advantage is taken of such remedial measures as sedatives, stimulants, atropin, and blood transfusion. Protein therapy is used to allay autonomic irritability and to stimulate natural body defenses.

An important factor in the medical control of ulcer is a well-planned follow-up program that has for its object continued supervision of the progress of repair over a period of time that is reckoned in terms of underlying pathology and its response to management, rather than in weeks or months. During infections of any kind immediate steps are taken to protect the sensitive scar.

The symptomatic response to impairments of vital organs is often reflected by sensitiveness of the gastrointestinal tract. Diseases of the heart and lungs, kidneys and nervous system, may come disguised as dyspepsia, so that a comprehensive physical survey is imperative as a preliminary procedure in the repair of ulcer.

Evidence of Healing.—It is comparatively easy to, and most any physician can, control the symptoms in the average case of peptic ulcer, but, of course, symptomatic relief alone is not our ideal aim. Favorable symptomatic response is presumptive, but not positive evidence of healing. Positive evidence of healing is an objective finding. Spontaneous remission in symptoms may begin at the very onset of medical therapy, as it can follow a gastro-enterostomy, without any actual healing. This distinction is a great factor in the success or failure of ulcer control.

In considering the evidence of healing the cooperation of the roentgenologist is essential. The value of a carefully interpreted skiagraph and screen observation as an aid in diagnosis is not to be underrated. In the determination of the type of ulcer, its location, the presence or absence of complications, and as evidence of healing, roentgenology is our most valuable handmaid. In fact, fluoroscopic observation of the progress of repair is of paramount importance, and when it corresponds favorably with subjective improvement and laboratory findings, it becomes convincing evidence that healing is rewarding our efforts. When the ulcer is located proximal to the pylorus positive evidence of healing can be obtained by the use of the gastroscope. The study of pathology in the surgical arena as well as in the postmortem room presents incontrovertible evidence of healing. We have, then, suggestive clinical, convincing roentgenological and positive gastroscopic and anatomical evidence that ulcers do heal!

COMMENT

In the conservative therapy of peptic ulcer emphasis is placed on prevention, early and accurate diagnosis, and careful consideration of the type of lesion, its location and extent of structural damage, and of such complications that respond to medical therapy and afford reasonable assurance of healing. Attention is called to the distinction between evidence of healing and spontaneous remissions, and the importance of a follow-up system in order to prevent recurrences. An extended period of health supervision, an occasional gastric analysis, stool examination and fluoroscopic observation is considered essential for permanent results in the control of peptic ulcer.

In conclusion it may be permitted to point out that the physician who desires to succeed in the treatment of digestive disorders must be more than a physician. He must know and understand the problems of contemporary society. This is perhaps best illustrated by an example: We see that in the stress and turmoil of modern business and industry, not infrequently the first evidence of impending danger is some form of dyspepsia, observed in a type of individual, who, in the struggle for financial independence, never takes a vacation and continues to abuse the laws of health, until the neglect is penalized with a distorted mind in a sick body—a sacrifice on the altar of false duty and economic freedom.

One may be a wizard on the Stock Exchange and not know how to play. Success and economic independence will provide shelter, but not home; leisure, but not contentment. Money will buy food, but not appetite; it will provide sleep, but not rest; companions, but not friends.

Good health is life's greatest asset and its conservation should begin early along the way. Cultivate a hobby, preferably one that will provide rest and relaxation and plan for an equitable adjustment of work and play. Spend more time in getting acquainted with your home and family, and with your health adviser; play golf with your physician and know your dentist well, be-

cause it is a kind of thrift and form of investment that brings dividends in health and happiness.

Correct eating habits, oral hygiene, well-balanced dietary, well-prepared and well-masticated, personal and moral cleanliness, poise and emotional control, right thinking and right living, all contribute to healthy digestion and the prevention of peptic ulcer.

55 East Washington Street.

DISCUSSION ON PAPERS OF DRS. SNORF AND THORGAARD

Dr. Sidney A. Portis, Chicago: It is difficult to discuss these papers in the limited time at my disposal, and therefore I will be as brief as I possibly can. I believe that there may be definite evidence of healing in lesions of the gastric wall, but I have never been convinced that x-rays are of much value in evidence of healing of duodenal ulcers except that the spasm may not be as great. The cicatricial narrowing persists even after the most rigid type of medical treatment. I am not at all sure that the clinical course of ulcer is the most important evidence in making its diagnosis, and neither am I convinced that the complete absence of pain on the use of alkalies with or without food is in itself pathognomonic of ulcer. There are other conditions which give the identical same clinical picture.

I am becoming more and more impressed with the fact that if a patient has a continued epigastric distress simulating ulcer over a period of a year or more, without x-ray evidence of a lesion of the stomach or duodenum, one should be guarded in making a definite diagnosis of ulcer in that patient, or putting that patient through a long continued regime of ulcer management when in the final analysis it may be decidedly an unwarranted procedure.

Furthermore, I am diametrically opposed to the point of view that we should not individualize any of our ulcer cases and to treat them as a group may do distinct harm to the patient. Some of the cases may never be amenable to medical management and should and must have surgical intervention. I think by this more broad-gauged view of the whole situation that the patient's interest as a whole may be better served.

Dr. Karl L. Thorsgaard, Chicago (closing): In our discussion of the healing of ulcer an attempt was made to emphasize the fact that cessation of symptoms or feeling of well being does not always mean that the ulcer is healed. Clinical observation teaches us that serious complications such as hemorrhage or perforation may occur in an individual who gives little or no history of previous dyspepsia. This observation holds also for cancer of the stomach. In one of the theories of the origin of cancer emphasis is placed on the biologic aspect and on irritation. According to this theory, cancer will not develop without irritation. If it occurs in the stomach one speaks of the irritation as some form of maldigestion.

I wish to express my appreciation to the officers of this section for their courtesy and to those who took part in the discussion as well as the privilege that has been mine to discuss some of the problems of peptic ulcer.

SUBTOTAL RESECTION OF TIBIA REPLACED BY FIBULA

JOHN R. HARGER, S. B., M.D.

CHICAGO

The basis of this discussion centers about the case of a child two and one-half years old, who suffered from an extensive inflammatory destruction of her tibia which was eventually replaced by the fibula. The epiphyseal cartilages, however, play the more important role in our attempt to restore function. Acute osteomyelitis has long been considered one of the most formidable conditions confronting the surgeon. One which if diagnosed early and treated radically offers results approximating one hundred per cent, but if unrecognized, and therefore neglected, is capable of producing complete destruction of a bone, and very often endangering the life of its victim. The disease lends itself to treatment which promises a fairly early return of function or to that which leads directly toward a state of chronic invalidism. A debt of gratitude we owe to the advances of modern surgery, which now enables us to offer a fair return of function to some of those unfortunates who have suffered extensive destruction of their long bones.

Present day surgical technique has well demonstrated what marvelous reproductive powers the human tissues possess. There is no structure in the body that demonstrates this more completely than does bone, when treated with due respect for aseptic principles. It can be made to respond to the handiwork of the surgeon and the demands of nature more than any other tissue in the body. However, well known these facts may be, patients continue to present themselves with bone lesions that will test the skill of any surgeon and the mechanical genius of the best trained minds.

The causative factors which lead to the infection and extensive destruction of bone as well as the immediate pathology produced, are too well recorded and generally known to warrant repetition at this time. On the other hand, the remote changes in the bone and soft tissues, fol-

lowing wide destructive lesions of this type, will bear more careful consideration and more serious thought.

As far as my studies extend in this case, literature fails to record satisfactory answers to many of the questions that arise during the course of treatment.

The case to which I call your attention was a female child two and one-half years old who came under our care in March, 1919. Family and personal history have no bearing except she was a twin and up to date had lived on an exclusive liquid diet. She was suffering from an acute osteomyelitis of the right tibia of seven weeks' duration, which had been very poorly treated. The picture presented was one of ex-

Fig. 1. Fig. 2.

Fig. 1. Condition of shaft of tibia just before resection. Note only small fragment of live bone just above lower spiphysis.

Fig. 2. Extent of regeneration after several months and where it remained for 3 or 4 years. While the leg increased in actual length about two inches because of the fibula.

treme sepsis, great emaciation, blood findings of about 60%, marked enlargement of the entire tibia and leg from knee to ankle. Fig. 1. The x-ray revealed almost complete destruction of the tibial diaphysis.

The problem then was that of a very much undernourished child, septic in the extreme, with marked secondary anemia and the question of the life or limb of the patient at stake. As in other surgical emergencies one's best judgment is the only port in the storm, and in this case resulted in an immediate resection of the diaphsis, except a small fragment at the lower end. This decision was reached only after better drainage, partial resection with drainage, or immediate amputation were considered.

After an incision through the soft parts and the periosteum the greater portion of the shaft was found lying free in a pool of pus. The upper epiphyseal cartilage was exposed and gently curretted to free it of pyogenic membrane and considerable pus was evacuated from the lower popliteal space posterior to the epiphysis. At the lower pole a small fragmant of diaphysis was left with what appeared to be healthly cartilage.

Our efforts were rewarded by an immediate relief from sepsis, wound closed in six weeks and patient gaining rapidly.

We were now forced to provide means of locomotion while waiting for regeneration of bone. A brace with or without crutches seemed inadvisable for a child so small. We thus provided a reinforced flexed plaster cast and permitted the toes and ball of foot to extend beyond the cast for balancing body weight.

Regeneration of bone progressed favorably for nearly a year, but left a defect of 3½ inches. Fig. 2.

At this stage a transplant was seriously considered, but several questions arose which led to a postponement; among which were the following: First, at this time the bones were actually and relatively very small. Second, the viability of the epiphyseal cartilages could not be determined. Third, growth in length would in part be maintained for a time by the fibula and, fourth the child was comfortable and active.

The question of the viability of the epiphyseal cartilages remained unanswered for many months, and we were confident that if transplanting were delayed a better relative lengthening of the leg would result. However, the limited function of the leg without a transplant was not free from hazards. It was noted from

time to time that the new formed bone began to be absorbed and the epiphyseal ends to show atrophic changes, and a noticeable tilting of the pelvis was developing which bid fair to interfere with future growth and eventually the maternal activities of adult life.

After four and a half years of watchful waiting it was noted that the relative length of the

Fig. 3.

Fig. 3. A few days after upper end of fibula was transplanted under tibial fragment, also note ankylosis between lower tibial fragment and the shaft of the fibula, and the lower end of fibula is slipping past the ankle joint.

leg was not keeping pace with the opposite one, partly because the fibula was slipping past the tibial tuberosity and the ankle joint below. In the meantime there had developed an ankylosis between the lower tibial fragment and the fibula, while this bone had hypertrophied considerably and thus offered a good substitute for the tibia in the upper part of the leg.

In November, 1923, after careful preparation the upper end of the fibula was transplanted under the upper fragment of the tibia. Operation. The incision was made lateral to the old scar, anterior to the center of the interosseous membrane, thus offering an easy approach to the internal anterior aspect of the fibula as well as the tibial fragment. The fibula was freed from muscles over its upper third. The pointed end of the tibial fragment was exposed and irritated. We then determined the proper level at which to saw the fibula so it could be transferred across anterior to the interosseous membrane and allow the pointed end of the tibial fragment to rest in the medullary cavity of the fibula. This was readily accomplished and served as a wedge to maintain the opposing fragments in position without other mechanical means. Fig. 3. The

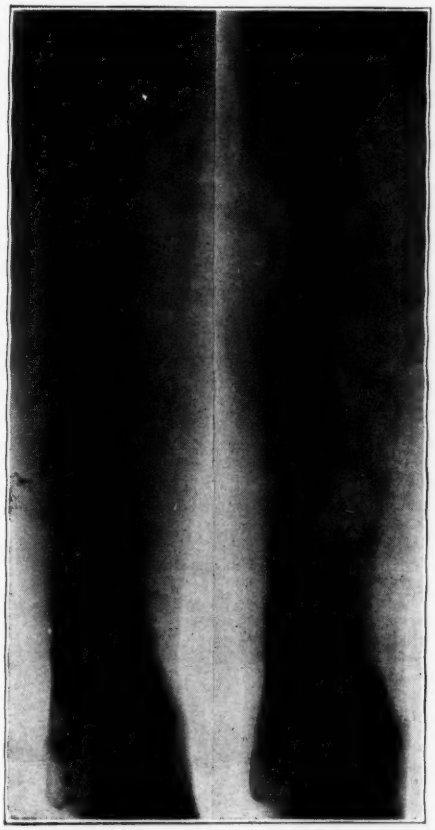


Fig. 4. Fig. 5.

Fig. 4. Five months after transplant. Note that epiphyseal cartilages are very indefinite and that ankylosis of bones below is well established. Note relatively poor ankle joint articulation.

Fig. 5. Two years after transplant. Note nearly normal ankle joint with rotation of tibial fragment and relative raising of lower end of fibula.

wound healed promptly without infection and then the problem of immobilization was to be solved. We recalled that the hamstring muscles

had for several years maintained the tibial fragment slightly flexed and we were tempted to fix the leg in a semiflexed position, but for obvious reasons it seemed best to provide fixation in a fully extended position; care at all times being taken to prevent rotation of the foot.

Following the transplant of bone the wound healed promptly and soon a callous united the two fragments. The child was then provided with a well fitted brace and shoe and at the end of a year she was using the leg freely. Fig. 4. The union of the fibula and lower tibial fragment had become more secure and in 18 months she walked readily without any support. Fig. 5.

Fig. 6.

Fig. 6. Three and half years after transplant ankle joint now very prominent, articular surface of tibial fragment changed markedly due to weight bearing and inward rotation of the fragment.

Examination eleven months after transplant showed what had been anticipated, that union had occurred with the tibial fragment slightly flexed, thus resulting in a hyperextension of the leg of 10 or 15 degrees. The child soon learned to control this by muscular action, and aside from a shortening of about two and one-half inches her leg functioned normally.

About two years after the patient was permitted to walk on the leg, she returned for observation and a condition shown in Fig. 6 was found. The ankylosis between the fibular shaft and the tibial fragment had proven itself inadequate for weight bearing because of poor alignment, bringing the line of pressure outside the long axis of the leg and foot. With further shortening and deformity inevitable transplantation of the lower portion of the fibula was advised.

Fig. 7.

Fig. 7. Ten days after transplantation of lower end of fibula. Excellent alignment of fragments with ankle joint simulating very closely that of a normal child.

Correct relation of ankle joint and leg must be secured and if possible some increase in length of leg obtained. To bring this about we first severed the ankylosis between the tibia and fibula, lengthened the tendo Achillis and inserted a Steinman pin into the os calcis. By means of the pin, extension was maintained for three weeks with weights increased to 12 pounds. Having thus accomplished the desired result with an increase of a half to three-fourths of an inch in length, transplantation was attempted.

An oblique section of the fibula with lower end of the upper fragment resting in a drilled opening in the tibial stump, seemed to offer the best immediate and ultimate results. However, we found we had not judged properly the condition

of the fibular structure, for the lower end of the upper portion came to be the part which had been ankylosed with the tibia. When it was being manipulated into line with the tibia the lower end was broken off, making it entirely too short for the purpose for which it was intended. Further transplanting was thus made necessary. This problem was solved by taking the anterior

Fig. 8.

Fig. 8. Eight weeks after transplant showing position has been maintained and callus developing about the fragments.

half of the lower fibular fragment which was inverted and placed in the drill hole in the tibia. This enabled us to anchor the upper fibular fragment and complete the formation of an ankle and lower leg, simulating very closely the normal.

The subject of bone transplantation has been well covered in recent literature, but the function of the epiphyseal cartilage associated with transplants should receive further consideration.

The removal of the shaft of a long bone in destructive osteomyelitis is a comparatively simple procedure, but the preservation of the cartilages and the regeneration or replacement are questions far more difficult to solve.

Since 1879 down to the present, authors have reported cases of resection of long bones, partial or complete, for osteomyelitis or tumor growths and have secured regeneration or substitution with more or less satisfactory results.

Calhoun and Bradford in 1879 and Senn in 1880 report such cases, with extensive excision of the tibial shaft with regeneration. In more recent years Torrance, Stoney, Bond, Stone, Nichols, Huntington, Humiston, Beck, Campbell, MacAusland, Beye and many others have reported on their work more or less extensively. Many types of cases are recorded, some where spontaneous regeneration took place, while others called for bone transplants. In most cases fairly satisfactory results are reported. Where x-ray plates are shown the larger per cent indicate a *normal epiphyseal cartilage.* This is especially true in MacAusland's and Beye's cases. Beye's third case of tibial resection was a brief report of my case.

No one author has had sufficient experience with these cases to enable him to establish definite surgical principles on which to base the treatment. Nichols in 1904 gave the best and most logical discussion of the whole subject. He stresses early resection of necrotic bone while the regenerative power of the periosteum is at its best. The satisfactory regeneration he obtained in several cases bears out his contention. Nichols is one of a very few authors who call attention to the importance of the epiphyseal cartilages. He thinks the time for resection must of necessity vary in the cases, but the average would be about the eighth week or when a thin layer, say 1/16 of an inch, of new bone was deposited.

To be called upon to resect the shaft of a long bone, for osteomyelitis, is a sad reflection on the medical profession. However, as we are confronted by such problems, better methods of restoring function should merit our attention.

In the study of this subject numerous problems present themselves. When these are solved intelligently we will have a dependable guide for the treatment of such cases.

First: What are the essentials for the regeneration of bone and particularly the diaphysis of long bones? This point is not settled in the minds of most of us, for some claim that periosteum, endosteum and surrounding connective tissue are required. And yet all types of connective tissue possess osteogenetic properties

under certain unknown conditions. Illustrated by sesamoid bones and myostis ossificans. Relatively early operation for ununited fractures offers a higher percentage of good results, and the same holds good in the resection of the shaft of long bones for necrosis. This would indicate that under such conditions the essential elements are present in a large number of cases or they are more vigorous, and that in delayed cases these elements are absent or of low vitality.

One may conclude that in osteomyelitis the cambium layer with its osteoblasts may be destroyed by the infection or unintentionally removed with the necrosed bone.

MacEwen contends that in the presence of acute osteomyelitis, especially in the early stages, the osteoblasts accumulate in the Haversian canals and due to pressure from within are forced to the surface and infiltrate the meshes of the areolar tissue under the periosteum. That in this way the osteoblasts are saved from being destroyed with the compact bone. He attempts to show that if the infection is very virulent and sudden extensive necrosis occurs, or if the nutrient artery becomes thrombosed early that the osteoblasts are not given a chance to escape under the periosteum but perish with the compact bone, and in these cases regeneration is either retarded or fails to occur. If these conclusions are true or not the fact remains that in some cases regeneration is prompt and complete, in others it is retarded or absent.

The second question that presents itself is—in what cases may we expect regeneration and which ones not? If the above conclusions regarding regeneration be true we may be able to answer this question within reasonable limits.

Third: What artificial or natural resources may we employ to encourage osteogenesis? Shall we permit a necrosed diaphysis or a part of it to remain in situ until an involucrum is well established, or will early resection with a temporary artificial bridge or the approximated periosteal sheath serve better as a guide and stimulus for the formation of new bone? Nichols favors early resection, about the eighth week, and approximation of the periosteal sheath laterally.

Fourth: At the time of excision of a necrosed shaft or at a later date, how may we determine the viability of the epiphyseal cartilage? This can be answered only by the future changes in the bone, but a failure to replace the removed diaphysis would indicate a questionable cartilage and retarded length would assure one of it.

Fifth: When regeneration fails what will be our rules of conduct? After six months with failure should a transplant be made? Each case must be treated as such and a transplant instituted at the opportune time.

Sixth: The source of the transplant will be that one best suited in each case; however, the companion fibula is the most available and sure in a great many cases.

Seventh: When the viability of the tibial epiphysis is in doubt that of the neighboring fibula may make an excellent substitute.

Eighth: Should some method of retarding growth in the opposite leg receive serious consideration?

Ninth: Would an excision of a fragment for shortening the other leg be a safe procedure?

That cartilage lives and functions without a blood supply is well known and that its nourishment must be derived from contiguous tissues is another salient fact, but can epiphyseal cartilage survive when attached only on one side with its normal bone and be bathed on the opposite side by a serosangunous exudate more or less devitalized by infection, is the question confronting one when resection of the shaft of a long bone is considered.

Resume

1. Extensive destruction of the shaft of a long bone is to be expected in long standing, poorly treated osteomyelitis.

2. Resection of the necrotic shaft in toto is a recognized procedure.

3. The regeneration of the diaphysis of a long bone under present methods of treatment is very problematic.

4. Replacement by graft of any part of a lost diaphysis is quite easily accomplished.

5. The fibula of the same side makes the best graft.

6. Before adult life the viability of the epiphyseal cartilage is the most important consideration in the permanent restitution of function.

7. A transplanted fibula or fragment of tibia soon develops into a weight bearing bone.

8. A well developed involucrum does not

make a good substitute for the entire diaphysis.

BIBLIOGRAPHY

1. Senn, Nicholas: Resection of Shaft of Tibia with Regeneration. Chicago Med. Jour. and Examiner, Jan., 1880.
2. Bradford, E. H.: Subperiosteal resection of portion of tibia. Boston M. and S. Jour., 1879.
3. Balfour, F. R.: Resection of shaft of tibia. Tr. M. Asso. Georgia, 1879, Vol. XXX.
4. MacAusland, W. R.: Surg., Gyn. and Obstet., April, 1912, Vol. XIV.
5. Torrance, Gaston: Fibula used to replace a resected tibia. Surg., Gyn. and Ob., Feb., 1912, Vol. XIV.
6. Stoney, R. A.: Grafting of fibula to tibia. Med. Press and Civic., Dublin, 1908, Vol. CXXXVI.
7. Stoney, R. A.: Tr. Roy. Acad. Med., Ireland, 1908. Vol. XXVI.
8. Humiston, C. E.: Resection of upper end of both tibiae, for Osteomyelitis. Surg. Clinics of Chicago, 1919.
9. Beck, Carl: Subperiosteal resection of tibia for Osteomyelitis. Surg. Clinics of Chicago, 1919.
10. Campbell, W. C.: Transference of fibula as an adjunct to free bone graft in tibial deficiency. Jour. Ortho. Surg., Boston, Vol. I, 1919.
11. Bond, C. J.: Fibula Transplants. Brit. Jour. Surg., 1914, Vol. 1.
12. Huntington, F. W.: Annals of Surg., 1905, Vol. XLI.
13. Stone, J. S.: Annals of Surg., 1907, Vol. XLVI.
14. Nichols, E. H.: Jour. A. M. A., 1904, Vol. XLII.
15. Royle, N. D.: The Treatment of inequality of length in the lower limbs. Med. Jour. of Australia, 1923, Vol. I.

CONSERVATIVE TREATMENT OF HEMORRHOIDS

WILLIAM A. HINCKLE, M.D.

PEORIA, ILL.

The changing attitude of the profession toward the conservative or injection treatment of hemorrhoids since its introduction by Dr. Mitchell in 1871 is interesting and instructive. For nearly a quarter of a century after its introduction its use was confined largely to the uneducated and irresponsible. As a secret cure-all, it was sold to anyone who would pay the price. Even under such unfavorable conditions, the percentage of favorable results were sufficient to attract the attention of competent physicians.

Dr. James P. Tuttle, Professor of Rectal Surgery in the New York Polyclinic, in his "Diseases of the Anus, Rectum and Pelvic Colon" (A. D. 1902) after an analysis of over 3,000 cases of hemorrhoids treated by the injection method wrote: "Lately, however, a better knowledge of the method and the class or cases to which it is applicable have led many surgeons to give it a trial, and their reports are very satisfactory. The method is well worthy of thorough consideration."

Dr. A. B. Cooke, formerly professor of proctology in Vanderbilt University, in his book "Diseases of the Rectum and Anus" (1914) said: "For many years physicians regarded the secret method with outspoken contempt. With scarcely an exception, medical writers referred to it slightingly or condemned it and its users in the most sweeping terms. And the same attitude is maintained to a certain extent today, with the result that the method is still being successfully exploited in all parts of the country by 'no-knife' advertisers, to the continued detriment and chagrin of the self-respecting profession. There is in reality no reason or excuse for the existence of such a state of affairs. The method is not and has not for many years been a secret. The profession should consider without prejudice whatever merits it may possess and so be in a position to advise the public intelligently upon the subject."

In the same year Dr. Jerome M. Lynch, Professor of Rectal Surgery in New York Polyclinic, in his "Diseases of the Rectum and Colon" (1914) wrote: "This method is not popular, owing to the fact that it has been exploited by the quacks. Since, however, it has been taken up seriously by the regular profession, very good results have been obtained in the hands of careful men."

Dr. Charles D. Aaron, Professor of Gastro Enterology in Detroit College of Medicine and Surgery, writing of the injection treatment of hemorrhoids in the *New York Medical Journal and Medical Record* for December, 1922, says: "This method of treatment for internal hemorrhoids and prolapse is to be preferred to surgery because there is no destruction of tissue and no danger of stricture. The cases can all be treated in the office and the patient need not go to bed, so there is no loss of time."

Arthur S. Morley, F. R. C. S., of St. Mark's, London, an institution devoted exclusively to the treatment of rectal diseases, in his book "Hemorrhoids," (1923), wrote of their treatment:

I am convinced that operation is rarely necessary and that the condition may be dealt with as satisfartorily and as safely by the method of interstitial injections, thereby saving the patient from lying up and sparing him considerable pain, inconvenience and expense.

To revert to my own experiences at St. Mark's Hospital and elsewhere, extended experience has given me ever-increasing confidence in the treatment and I think it would be an underestimate to say that I have treated 2,000 cases at St. Mark's Hospital itself and between 1,000 and 1,500 cases in private.

That my results from injection at St. Mark's Hos-

pital did not compare unfavorably with those of my colleagues there who operated upon their cases is shown, I think, by the fact that no less than three of the house surgeons, who had ample opportunities of watching both methods of treatment and of comparing them, are now enthusiastic practisers of the treatment by injection, whilst one of them came to me to have his own hemorrhoids injected.

Dr. E. R. Terrell of Richmond, Va., read a paper on "The Treatment of Hemorrhoids by Injection" before the American Proctological Society in May, 1925. He reported having treated over 3,000 cases in the preceding twelve years. A personal communication from the Doctor says he has now treated over 4,000 cases. Regarding this method of treatment Dr. Terrell concludes: "I am convinced that it is a safe, efficient and reliable agent in the treatment of simple uncomplicated hemorrhoids. The remedy has its limitations and satisfactory results will be gotten only when the surgeon is able to select cases suitable to its use. When properly selected and a faultless technic is employed, cures approximating 100 per cent. will be obtained."

Dr. T. Chittenden Hill, Instructor in Proctology, Harvard Graduate School of Medicine, in his "Manual of Proctology" (1926) said of the injection treatment: "To complete a cure in ordinary cases requires from three to a dozen or more treatments. Like other surgical procedures, a careful technic with much attention to detail and some little experience are required in order to get the most satisfactory results. At the present time, I employ this method in selected cases, more especially hemorrhagic cases, where it acts like a specific."

Dr. Joseph F. Montague, Lecturer on Rectal Diseases, University and Bellevue Hospital Medical College, wrote in this volume "Hemorrhoids" (1926):

The injection method of treating hemorrhoids is a legitimate and efficient method of treating properly selected cases.

Eminent surgeons in many countries throughout the world, including our own, have tried the method over a period of years, and agree in general that in properly selected cases the injection treatment of hemorrhoids may rightfully be included in the therapeutic armamentarium of physicians who have occasion to treat rectal diseases.

English Proctologists in general, and by this I mean men of unquestionable standing in their profession and high esteem in the medical communities wherein they are residents, are very much enthused over the careful use of the injection treatment of hemorrhoids. Sir Gordon Watson and Mr. Mummery at the St. Mark's Hospital in London, freely state their faith in its value in certain types of hemorrhoids. Mr. H. Graeme Anderson is most enthusiastic over the method. Bell, Alexander and Murphy have likewise stated their success with the injection treatment in various articles in the literature.

Finally, when we, as legitimate and ethical practitioners of proctology, contemplate the truly enormous numbers of patients who turn to the quack for this type of treatment, we must naturally inquire as to the cause. The reason, I believe, rests in the fact that most of us assume the attitude that there is but one treatment for hemorrhoids, and that is operation. By our own persistence in this attitude, we lead the laity to expect non-operative treatment from only one source —the advertising "pile doctor." There is no secrecy to the method, nor does anyone practicing proctology lack the requisite skill; all in all, we have no excuse for neglecting the method. It appears to me that by offering the laity injection treatment as an alternative to operative treatment, we could speedily deprive our outlaw confreres of their most valuable asset.

These few quotations arranged chronologically show the trend toward conservative treatment of rectal diseases. Competent and ethical physicians all over the country are now doing this work, so it is no longer necessary for those who would avoid radical operations to patronize the unqualified and unethical. When competent men have thoroughly tried and endorsed this method we may safely disregard the opinions and criticisms of those who have not investigated its merits.

630 Jefferson Building.

EXOSTOSES OF THE BONES OF THE FOOT

AIMÉ PAUL HEINECK, M.D.

Surgeon to the Frances Willard, Washington Park, Lakeside and St. Paul Hospitals

CHICAGO

Diseases of the feet have received inadequate study; often, they are misdiagnosed, mismanaged and injudiciously treated. Intensive study of foot ailments is needed; there will result therefrom greater precision in diagnosis and increased knowledge of the etiology, pathological anatomy and appropriate methods of treatment of many painful and disabling foot conditions. The two prerequisites to the permanent and complete cure of any disease are: (a) the exact knowledge of its causative factor or factors, and (b) the thorough understanding of its associated anatomical changes. Thus, for the successful treatment of

talalgia,[4] it is essential to know what causes the heel to be painful, because curative treatment necessitates the removal of the cause or causes.[28] Complete removal or suppression of the cause is followed by the subsidence and, eventually, by the complete and permanent disappearance of all objective and subjective symptoms.

In this contribution it is our purpose to discuss exostoses of the bones of the foot, subungual exostoses,[26] calcaneal spurs, etc. To insure a better understanding of the subject-matter of this paper, brief reference will be made to some bony and cartilaginous outgrowths foreign in nature to those considered in this communication.

We will merely mention at this time the multiple cartilaginous exostoses[1] designated by some deforming chondrodysplasia.[19] This disease presents (a) multiple,[14] often symmetrical, cartilaginous exostoses unassociated with pain; (b) hereditary[2] and familial[3] features (Maynard & Scott[25]: In thirteen of thirty-three cases, a positive history of heredity was obtained; (c) an onset in early life, probably before birth; (d) a more common incidence in males than in females; (e) the abscence of infection as an etiological factor. Some authors attribute this disease to metabolic, others to endocrine disturbance.[6]

Exotoses cartilaginea are also omitted from this article. Developing exclusively during the period of normal growth of bone[7] and usually affecting the lower extremities of the femur and radius and the upper extremities of the humerus and tibia, they are unilateral outgrowths of epiphyseal cartilege gradually displaced by skeletal growth upon the shaft of the bone. These exostoses are called by some ossified chondromata.[12] Nerve fibres have not been demonstrated either in the osseous tissue or in the encrusting cartilage of exostoses.

Exostoses of the scaphoid, of the head of the first metatarsal of the phalanges, subungual exostoses and calcaneal spurs are totally independent of skeletal growth and, apparently, are due to inflammation, infection, chronic irritation[30] or traumatism.

Subungual exostoses, first accurately described by Dupuytren, are osteo-cartilaginous or osseous in nature. They most often develop upon the dorsal surface of the distal phalanx of the great toe; rarely upon the other toes (little toe[26]). They are more common in young adults. Though their exact etiology is as yet undetermined, it is generally admitted that injury of the affected toe plays an important rôle (contusion, blow, pressure of a tight shoe) in their causation. Many believe that they are due to irritation; others attribute them to exuberant growth of cartilage in the transition stage. Subungual exostoses press into, but do not grow into the subjacent phalanx. Their growth is, for a time, impeded by the pressure of the overlying nail.

Subungual exostoses develop from connective tissue, cartilage or periosteum; they vary in size, are slow of progress and, after ulceration of the overlying derma, are attended with more or less fetid discharge. The pain and tenderness inherent to them are increased by shoe pressure and by walking. Once the nail has been perforated, it exerts no further restraint upon the exostosis, and the latter grows above the nail level. At this period, the pain is acute and the disability great. The nail over the growth is, at first, raised from its bed. If the condition be unrelieved, the growth may project beyond the free edge of the nail, may curve the latter upward and finally break or perforate it. At this time, the pressure of the shoe is unbearable.

The condition is easily diagnosed from the appearance of the toe. If ossification has occurred, a lateral roentgenogram gives conclusive evidence; it shows a cylindrical-shaped exostosis arising from the dorsal surface of the distal phalanx near its most distal point.[10]

The curative treatment of subungual exostoses is operative. Their removal is effected under local or general anesthesia. The nail should either be extracted or enough of it removed to completely expose the growth. The growth is completely removed; it is chiseled and gouged out. Curette thoroughly the base of implantation, thereby avoiding recurrence; control bone hemorrhage by compression. Apply usual dressings and immobilize part.

Calcaneal spurs are single or multiple,[8, 34b] unilateral or bilateral, occur at all periods of life, and with greater frequency in males than in females. Lewin reports a case in a boy aged nine years; Sundeloef,[35] in a boy seven years old. They are larger at the base than at the free anterior end and vary in shape and in size; may be so enlarged as to project as sharp points half an

inch longer.[21] They are found most commonly upon the inferior and posterior surfaces of the os calcis, originating usually from the medial process of the tuberosity, less frequently from the lateral process, rarely from both processes. They may be implanted anterior to the tuberosity. These tubercles give attachment to the abductor digiti quinti, flexor digitorum brevis and abductor hallucis muscles. Retro-calcaneal spurs are implanted on the upper half of the posterior surface of the calcaneum, anterior to the tendo Achillis and are capped by the retrocalcaneal bursa which, in these cases, is usually the seat of pathological changes.

Many clinicians contend that the collapse of the longitudinal arches of the foot causes increased tension and exaggerated strain upon the aponeurotic and muscular insertions of the plantar fascia, of the flexor brevis digitorum and abductor hallucis muscles;[23] this irritates the periosteum and gives rise to cartilaginous vegetations which later on calcify. Similar thorn-shaped or prickle-shaped excrescences occur on the humerus, on the ulna[16] and other bones, also on amputation stumps, probably an ossification in muscle, the result of stripped periosteum.

Calcaneal spurs often coexist with infectious diseases: sylphilis, gonorrhea, etc.; with toxemic conditions (gout,[34a] rheumatism, etc.), with chronic focal infections. After the successful treatment of these coexisting conditions, not uncommonly, the spur or spurs disappear. This gives weight to the view expressed by many investigators that infectious diseases, toxemic conditions and focal infections (especially oral) are contributory causative factors. "It has never been definitely demonstrated that the Neisserian diplococci are capable of inciting hypernutrition with consequent exostosis or osseous outgrowth in any anatomic situation, although systemic invasion of these microorganisms is frankly admitted,"[29] Burt[33] contends that the osteophytes or exostoses in gout and arthritis deformans are due to mechanical irritation and that they are not the sign of a specific disease. According to him, their presence in these diseases signifies that the joint has been used while the ligaments are still weak from some pathological condition, such as senile degeneration, gout, trauma, trophic changes, or microbic disease.

Trauma is the main causative factor, the direct exciting cause. In the standing position, the heel bears the greatest portion of the body weight; during walking, it receives the heaviest jolting (foot-strain).[27, 31] This partially explains the not uncommon occurrence of exostoses in corpulent individuals whose occupations call for prolonged maintenance of the erect posture, such as laundresses, policemen, cooks, etc.

Exostoses never occur in the presence of suppuration.[17] It follows that if a connective tissue be the seat of suppuration, no exostosis will develop in it.

Structurally some are formed by adult normal bone tissue,[5] while others present evidence of inflammation.

Exostoses arise from the periosteum beginning usually as an acute periostitis, later becoming subacute and then productive, going through the customary stages of bone production until bone is fully formed. First, owing to the stimulation by trauma or infection, or both, there is a proliferation of the osteogenic layer of the periosteum, then partial ossification, and finally complete bone formation with firm attachment to the underlying bony structure.[8,11]

Blencke[34b] studied six hundred and seventy-three unselected roentgenograms of the foot and found spurs present on the os calcis in nineteen cases. They are frequently detected on the posterior and plantar surfaces of the os calcis during routine x-ray examinations of the foot for other conditions. Very often they give no symptoms until some trauma occurs, such as falling and striking on the heel; often the disabling symptoms become manifest with the advent of a local or systemic infection.

They may be painless. "Although calcaneal spur is quite a common abnormality, it is a rare cause for pain."[28]

In bilateral exostoses, one heel may be painless and the other, the seat of acute[18, 34a] pain. Both may be the seat of pain, of simultaneous or consecutive occurrence and of disability, of equal or unequal degree. The onset of pain is insidious or sudden; the whole heel may become painful. No constant relation exists between the size of the exostosis and the pain associated with or determined by it.[5] The exostosis on the painless foot may be larger than that on the painful foot. The patient experiences pain every time the heel comes in contact with the ground.[15] Pressure

upon the exostosis excites pain and aids in determining its site. This localized tenderness[22] is a subjective symptom of great diagnostic importance, and often serves to differentiate the pain of exostoses from that due to talalgia of other causes. Erect posture and walking are painful, at times, impossible. When the patient is at rest, as when lying in bed, the pain gradually disappears. The patient instead of bearing the body-weight mainly on the heel transmits it to the ball of the foot. The gait is slow and careful. The exostosis may irritate, stretch the nerve filaments in its immediate neighborhood. A bursa that at times caps the exostosis may be the seat of inflammatory or degenerative changes. In retro-calcaneal spurs there is usually a visible swelling to either side of the tendo Achillis and dorsi-flexion of the foot is painful. Plantar and retro-calcaneal exostoses may be present in the same patient.

In all cases of talalgia, in fact, in all obscure foot conditions, the affected and the unaffected foot should be radiographed so as to establish the presence or absence of exostoses. Often the condition is erroneously diagnosed flat-foot or painful heel. Inspection may reveal nothing abnormal, though frequently pes planus or pes cavus coexist. Some exostoses have the opacity of other parts of the calcaneum, are dense and definite in outline and present the structure of normal adult bone. Others, of inflammatory origin, are pale, have a blurred outline; calcification is less advanced.[36]

The treatment is palliative or curative. It is self-evident that the patient's general health must be improved by the elimination of all possible debilitating factors. The removal of infected tonsils, the cure of oral and of other focal infections, the effective treatment of gonorrhea, syphilis[32] and of all toxemic conditions, such as gout, rheumatism, etc., is urgently needed.

Pain due to direct contusion or bruising of the tissues is treated by rest and, if necessary, by change of occupation. If the patient is suffering from a disease contra-indicating operations of election, resort to palliative treatment. A rubber heel combined with a cork insole so cut as to remove direct pressure upon the sensitive points, often affords great relief. If despite these hygienic measures, pain persists, the operative removal of the spur, irrespective of its size or location, is indicated. Exostoses unassociated with symptoms do not call for removal. The ablation of the spurs is effected under local, regional, spinal[15] or general anesthesia. For the removal of spurs located on the posterior surface of the os calcis, a vertical incision may be made to either side of the tendo Achillis, preferably in the middle of this structure, through its whole thickness. Injury to the posterior vessels and nerves is to be avoided. Remove the bony protuberance and the retro-calcaneal bursa whose walls as the result of irritation are usually hypertrophied and inflamed. For those located on the inferior surface of the os calcis, a few operators use a plantar incision and claim not to have seen any trouble arise from the subsequent scar. We prefer a slightly curved horizontal incision,[20] including the skin and cellular tissue, made along the inner or the outer or both surfaces of the heel. Some operators using incision encircling the heel turn down the heel flap and lay bare the inferior surface of the posterior part of the os calcis. By blunt dissection, the tubercles and the exostoses are exposed. The latter are usually ensconced in the calcaneal insertions of the abductor hallucis. Exostoses are best removed by means of chisel and mallet. Always gouge or remove some of the underlying bone and the advantitious bursa[24] if one be present capping the exostosis. Inflict the minimal amount of trauma upon the surrounding bone and soft tissues. Osgood[9] warns against the removal of the spurs unless it can be done with little operative trauma. Close the wound with silkworm-gut sutures. Caution the patient not to bear any weight on the foot for two or three weeks. When first beginning to walk, some pain will be felt; it will soon subside. The patient is to be provided with proper shoes, provided with felt pads relieving undue pressure.

Before leaving the hospital it is well that an x-ray of the foot be taken so as to be positive that the exostosis has been removed.

BIBLIOGRAPHY

1. Lardennois & Nathan: Sur la pathogénie des dyschondroplasies exostosogénique (exostoses ostéogéniques multiples). Bull. Acad. de méd., Paris, 1921, lxxxvi, 15.

2. Pinard: Exostoses multiples et douloureuses dépendant d'une hérédosyphilis difficile à mettre en évidence. Bull. et mém. Soc. méd. d. hôp. de Paris, 1921, xlv 1, 21.

3. Lenoble & Jégat: Trois cas d'exostoses ostéogéniques héréditaires et familiales. Bull. et mém. Soc. méd. d. hôp. de Paris, 1922, xlvi 2, 1661.

4. Desclaux: Talagie par exostoses sous-calcanéennes; guérison. Bull. et mém. Soc. méd. d. hôp. de Paris, 1923, xlvii 2, 1429.

5. Roederer: La Question de la Talalgie. Trois observations personnelles. Paris méd., 1926, ii, 70.

6. Garnier & Bloch: Un cas d'exostoses ostéogéniques multiples avec déformation concomitante de certains os longs. Bull. et mém. Soc. méd. d. hôp. de Paris, 1920, xliv 2, 1507.

7. Leriche & Policard: Croissance squelettique d'une exostose ostéogénique. Presse méd., 1923, xxxi, 905.

8. Lewin. Calcaneal Spurs. Arch. Surg., 1926, xii 1, 117.

9. Osgood: Arch. Surg., 1926, xiii, 457.

10. Davidson: Subungual Exostosis. Am. J. Orth. Surg., 1916, xiv, 150.

11. Merritt: Exostoses or Gonorrheal Spurs of Os Calcis. J. A. M. A., 1917, lxix 1, 118.

12. Eliot: Etiology, Pathology and Clinical Features of Benign Exostoses. Ann. Surg., 1920, lxxii, 228.

13. Leriche & Policard: Le mécanisme histophysiologique des troubles osseux d'origine nerveuse. Lyon méd., 1926, cxxxvii, 560.

14. Grandgérard: Radiographies d'exostoses ostéogéniques multiples. Rev. méd. de l'est, Nancy, 1920, xlviii, 449.

15. Aumont: Talagie par exostosesous-calcanéenne; opération; guérison. Bull. et mém. Soc. anat. de Paris, 1924, xxi, 103.

16. Gallois & Japiot: Exostoses olécraniennnes et achilléennes. Lyo méd., 1922, cxxxi, 290.

17. Nathan: Exostoses après blessure nerveuse. Ann. de méd., 1920, vii, 109.

18. Reclus & Schwartz: Les exostoses du calcanéum. Revue de Chirurgie, 1909, xxxix, 1052.

19. Honeij: A Study of Multiple Cartilaginous Exostosis. Arch. Int. Med., 1920, xxv, 584.

20. Moorhead: Gonorrheal Spur on the Os Calcis. S. Clinics, Chicago, 1919, iii, 623.

21. Openshaw: Deformities of the Os Calcis. Brit. M. J., London, 1923, ii, 1214.

22. Holzapfel: Kalkaneusexostosen nach Gonorrhoe. Duetsche Med. Wchnschr., 1919, xlv 2, 994.

23. Kirschner: Zur Frage des Kalkaneusspornes. Arch. f. Orthop. und Unfall Chir., 1924, xxiii, 125.

24. Mau: Ein Fall von ausgedehnter ossifizierender Calcaneusspornes, einer Bursa subcalcanea und Bursa achillea. Zentralblatt f. Chir., 1926, Liii, 2462.

25. Maynard & Scott: Hereditary multiple cartilaginous Exostoses. J. A. M. A., 1921, lxxvi, 579.

26. Kurtz: Subungual Exostoses. Surg., Gynec. & Obst., 1926, xliii, 488.

27. Toepel: The Painful Heel. J. M. A. Georgia, 1926, xv, 460.

28. Stiell: Painful Heel. Practitioner, 1922, cviii, 345.

29. Mapes: The So-Called Gonorrheal Heel. A. J. S., N. Y., 1917, xxxi, 34.

30. Ely: Exostoses: Internat. Clinics, 1919, iv, 80.

31. Toepel: Tender Heel. J. M. A. Georgia, 1917, vii, 29.

32. Swett & Stoll: Spurs on the Os Calcis, Hereditary Syphilis as Etiologic Factor in Case Reports. Surg., Gynec. & Obst., 1916, xxii, 674.

33. Burt: The Production of Osteophytes and Exostoses in Chronic Gout and Arthritis Deformans. Med. Chron., 1914, xxvii, 301.

34. (a) Blencke: Kalkaneusspornm. Muenchen. med. Wchnschr., 1917, lxiv 1, 461. (b) Blencke: Bemerkungen ueber den "Calcaneusspornm." Zeitschrift fuer orthopaedische Chirurgie. 1908, xx, 363.

35. Sundeloef: Report of a Case of Spur under the Os Calcis in a Child. Med. Rev. of Rev., N. Y., 1920, xxvi, 367.

36. Freund: Roentgenbefunde bei Exostosen. Med. Klin., Berlin, 1916, xii 2, 967.

MUSCLE-STRAIN PRECIPITATING A PNEUMOCOCCUS CELLULITIS OF SHOULDER GIRDLE, FROM RESPIRATORY INFECTION

OSCAR W. TULISALO, M.D.
ROCKFORD, ILL.

Mr. A., a married man, aged 41 years, had had no serious illness at any time in his life except a chronic pericarditis, first discovered about six months ago. At that time he was in bed about two weeks, and gradually got back to work, and has had no symptoms in the heart region for the last four months.

He went to the lake region of Wisconsin for a week's vacation. While there they drank water out of a spring. The last day he was there he had a headache and did not feel well. He drove home next day and was feeling very weak and had general malaise and some fever. When he got home he went to bed and stayed there for a couple of days, thinking that he would get over it.

About the third or fourth day after he returned home he called me to see him. I found him in bed with a temperature of 102.6 and a pulse of 100. He complained of a headache, and a backache, and most of all of pain in his right shoulder and the upper part of the right arm. On inquiry I found that he had cranked an outboard boat motor for two or three hours to start it. This seemed to be sufficient cause for the pain and soreness of the right shoulder. There was no redness or swelling at this time. On the right arm, however, the epitrochlear gland was palpable, but none were noticed in the axilla or in the cervical region. His throat was just a little red, but not enough to account for the fever. The lungs were clear—but he had an annoying bronchial cough that bothered him most at night. The pericardial rub was still present, but this remained the same as it had been for the last six months, and was causing no symptoms. He had vomited that morning and was still nauseated. I made a tentative diagnosis of respiratory influenza. That night at 2:00 A. M. he had a severe chill. The next day his temperature was about a degree lower, and he felt a little better in general; but his shoulder and arm were still very painful, but there was no change visible externally. That evening a neighbor prevailed upon him to call in an osteopath, and he got an osteopathic treatment. That night he didn't rest

much, next day his temperature was up one degree. He had vomited once or twice and had severe sweating spells. Nothing definite could be found, but the shoulder was the chief complaint.

The next day I advised him to go to the hospital, and it didn't take much persuasion because he was a very sick man. The disease had not run the course of an influenza, and I thought it must be either a typhoid or a tularemia. His afternoon temperature at the hospital was 105.4 rectally. His white count was 17,000. His main complaint was his right arm and shoulder—there was tenderness but no definite swelling. Blood culture was negative and two or three Widals were negative. Urine was negative.

The second day in the hospital his afternoon temperature, rectally, had dropped one degree, but the WBC count was 25,000.

On the morning of the third day definite swelling and redness were noticed in the right infra-clavicular region, and in the upper half of the right arm. Heat was applied. That afternoon his WBC had dropped to 18,000, and his temperature was 103.8.

The next day the swelling was a little more pronounced and there was a suspicion of fluctuation. A large hypodermic needle was inserted, under local, about 1½ inch below the junction of the middle and outer thirds of the right clavicle, and a heavy greenish yellow pus obtained. A smear of this pus showed an abundance of diplococci with the characteristics of pneumococci. Under gas anesthesia an incision was made through the skin at the site of the exploratory puncture, and on separating the fibers of the right pectoralis major muscle about four ounces of pus escaped. On digital examination of the abscess cavity it was found to be peri-articular, dissecting along the fascial planes in the sub-pectoralis region.

Following the drainage of this abscess the patient felt a marked relief, and progressed favorably toward recovery, although his temperature did not drop to normal, as it usually does on the opening of an abscess, it came down about a degree a day until it reached normal, and then stayed there.

About ten days later a small fluctuating area was detected in the upper biceps region. This was opened and about half an ounce of pus escaped. Since that his recovery has been rapid. The movement of the right arm is limited and painful; it is improving daily.

CONCLUSION

I have never seen or heard of a similar case, and it seems to me that the etiology and pathology of the case is as follows:

1. He cranked a boat-motor until the muscles of his right shoulder and arm were strained (such areas of muscle have very sluggish and poor circulation).

2. Then he got an influenza with a pneumococcus bacteremia (the bacteremia having cleared up before the blood culture was taken).

3. The pneumococci found a favorable medium and incubating place in the damaged muscle, where they proceeded to grow and produced the abscess, or cellulitis.

N. B.—Comment and discussion invited.

SOME STUDIES ON THE ACTION OF PARATHORMONE, PATHOLOGICAL PART*

WILHELM C. HUEPER, M. D.

Assistant Professor of Pathology, Loyola University, School of Medicine, and Director of Laboratories, Mercy Hospital

CHICAGO

In the experiments with dogs performed by Dr. Matthews and Dr. Austin, I had the opportunity to examine the organs of these animals upon the effects produced by the injection of excessive amounts of parathyroid extract.

The clinical course observed in the animals did not differ in general from the description given by Collip. In the beginning, when the blood calcium exceeded the normal level by about 3-4 mgr, a psychic depression, a slight decrease of the pulse rate and an increase of the urine excretion was observed. With increasing blood calcium the symptoms become more urgent. The dogs began to vomit in attacks, the pulse rate dropped more markedly and the pulse grew irregular. Simultaneously the coagulation time showed a decrease from two minutes to half a minute. In the final stage the animals vomited more freely a bloody mucinous material or even pure blood. Also bloody diarrhea was observed. The amount of excreted urine was diminished in

*Read before the Chicago Medical Society, April 20, 1927. It was illustrated with numerous lantern slides.

the final stage or complete anuria was then present. The urine showed a slight turbidity after boiling and leukocytes and kidney epithelial cells in the sediment. The dogs died after a period of general weakness and dizziness with the symptoms of coma.

The post mortem examination of these dogs was usually performed soon after death. Following gross pathological findings may be recorded:

1. The internal organs were hyperemic.
2. The heart was firmly contracted.
3. The stomach was filled with a dark red bloody fluid or a coffee ground colored material. The inner surface of the stomach was highly folded. The mucosa was markedly swollen and showed a red jelly-like appearance. Smaller and larger hemorrhages were not rare. These alterations were restricted to the fundus part, while the pyloric region was sharply demarcated from the fundus, showing an almost normal appearance.
4. The duodenal mucosa had the same red jelly-like swelling as the fundus of the stomach. Moreover, multiple small round shallow ulcerations were sometimes observed.

The microscopical findings were as follows:

Brain: The vessels in the brain were hyperemic, and in the region of the basal ganglions the pons and the medulla oblongata frequently surrounded by small hemorrhages.

Thyroid: Two types of thyroid glands were found. In those resembling the normal human thyroid in architecture calcium deposits were seen in the colloid either in form of coarse dark blue granules or diffusely dissolved in the colloid. In the other type, which was more similar to a human parenchymatous goiter, the interstitial connective tissue was impregnated with calcium salts, forming a dark blue stained framework in which the glandular formations were embedded.

Lung: Impregnation of the elastic membranes of the alveolar septa of the lung were only rarely seen. The alveoli were often filled with a serous or hemorrhagopurulent fluid.

Heart: Leukocytic infiltrations were scattered throughout the whole myocardium. They were either found in the neighborhood of small thrombotic vessels or between or around fragmented or necrotic muscle cells. Myocardial fragmentation was not rare.

Stomach: The cylindrical cell lining of the mucosa of the stomach was more or less destroyed and necrotic. The necrosis extended frequently into the deeper parts of the mucosa, which always showed signs of a marked degeneration. The mucosa as a whole showed a diffuse hemorrhagic inbibition. The vessels were extremely hyperemic and sometimes thrombotic. In small arteries and veins the thrombi were occasionally formed by conglomerated leukocytes. Calcium deposits were only seen in glandular cells, but here in a large number.

Duodenum: The pathological alterations of the duodenal mucosa were the same in character as reported for the fundus of the stomach but less marked. Grayish blue stained precipitations of calcium salts were seen in the muscle cells of the circular layer.

Pancreas: The pancreas showed small necroses and hemorrhages into the lumen of the ducts.

Liver: Necroses of liver cells were seen in several cases. These alterations involved either wedge-shaped areas or they were diffusely scattered in the liver tissue, leaving in places only the liver cells in the periphery of the lobules and along the interstitial tissue septa well preserved. Thrombi were found in the interlobulary branches of the portal vein.

Kidney: In the kidney the capillaries were hyperemic and hemorrhages into Bowman's capsule space were occasionally seen. The capsule spaces were also sometimes distended and filled with a serous fluid. Degeneration of the tubular epithelium was always observed. The albuminous exudate in the tubuli as well as the lining epithelial cells showed frequently calcium precipitations, a process which reached in some cases a very high degree. Calcifications of the basement membranes of the tubuli and Bowman's capsules as well as of the elastic membranes of the arteries were frequently present.

The study of the causes of the reported pathological alterations has to be based upon the knowledge of the physiological effects of the parathyroid hormone. Regulating the calcium metabolism it controls the acid-base balance of the cells and the body fluids and also the equilibrium of the tonus of the vegetative nervous system. The parathyroid extract administered in physiological doses induces:

1. A prolongation of the systole and a short-

ening of the diastole of the heart through irritation of the pneumogastric nerve.

2. A dilation of the vessels of the internal organs.

3. An intensification of the tonus of the stomach and the intestine.

4. A rise in the calcium level of the blood.

Excessive amounts of the parathyroid extract produce by an exaggeration of the above noted effects:

1. A gradually increasing incompleteness of the diastole of the heart and a slow and irregular pulse resulting in a drop of the blood pressure and an impairment of the general circulation.

2. They induce an excessive intensification of the tonus of the stomach and intestine, causing vomiting and diarrhea.

3. They augment by the highly increased blood calcium the coagulability of the blood to such a degree that the formation of thrombi in the congested vessels becomes imminent.

4. They cause such a supersaturation of the blood with lime salts that these are precipitated in various organs interfering eventually with their proper functioning.

Circulatory disturbances and changes in the coagulability of the blood produced by the injected parathyroid extract have to be held responsible for the reported hemorrhages in the brain, stomach, lungs and for the thromboses in the interlobulary veins of the liver and in the capillaries of the heart.

Metastatic calcifications were observed in the thyroid gland, the lungs, the heart muscle, the glands of the stomach, the muscularis of the duodenum, the kidney epithelial cells, secretions and elastic membranes. The occurrence of the calcium deposits in organs which excrete or produce acids as the lungs, the stomach, the heart, the kidneys, can easily be explained by their reaction being more alkaline than that of the blood. The affinity of colloidal substances as found in the thyroid gland is also known. But I can not offer a satisfactory explanation in regard to the diffuse impregnation of the interstitial tissue of the thyroid with calcium salts. An injurious effect of the calcifications upon the function of the involved organ was evident only in the kidney. The extensive calcifications of the tubular epithelial cells and the frequent obstructions of the tubular lumina by calcium casts will interfere with the function of the kidney and the drainage of the urine into the pelvis. A retention of phosphorous, ammonia and titrable acid results as reported by Collip.

The increase of the acids in the blood from this source is aggravated by the retention of CO_2, due to circulatory insufficiency, by the existing hyperphosphatemia and the loss of alkaline from the blood by the abundant vomiting and hemorrhages into the stomach and duodenum. These factors work together to change the primary compensated acidosis into a fatal uncompensated acidosis.

Injections of parathyroid extract administered in larger amounts and short intervals should not be given for therapeutic purposes without a continous control of the blood calcium, because excessive doses of this hermone produce dangerous circulatory disturbances and calcifications in vitally important organs.

Even injections of larger doses in intervals of three to four days to avoid accumulative effects are not absolutely harmless as recent experiments seemed to prove. I injected cats with 15-20 units of Parathormone twice a week over a period of three weeks and could state the occurrence of a few small necroses and surrounding leukocytic infiltrations in the heart muscle and the cortex of the suprarenal gland in several young cats. These experiments were done to study the influence of the parathyroid hormone upon the production and calcification of osteoid tissues. I fractured one leg and controlled the callus formation by weekly x-ray pictures. At the end of the third week the callus of the treated cats exceeded in amount and degree of calcification by about 20-30% that of the control cats. Histological examinations of the fractured bones showed also a higher amount of newly formed bone and a higher degree of consolidation than was present in the control cats. If further investigation should substantiate my present findings I would consider the parathyroid extract as an eventually useful therapeutic in cases of delayed fracture healing and in the treatment of rickets.

Finally I like to call your attention to observations made in the course of the before mentioned experiments with dogs. Dogs which had received injections of parathyroid extract and in which the blood calcium level was raised to around 15

mgr showed a markedly increased production of urine. The histological examination of the organs of these dogs revealed a general hyperemia of the internal organs which was especially pronounced in the vessels of the kidneys. The capillaries of the glomeruli were extremely distended with blood. There were no other pathological alterations in the examined organs, especially no calcium deposits, at this time. Taking these findings in account and considering that the parathyroid hormone is a strong stimulant of the vagus nerve a beneficiary effect of this hormone in cases of oliguria or anuria, being the result of an acute glomerulonephritis or reflex anuria, is very likely. By relieving the vessels of the kidney from the excessive vasoconstrictory splanchincus tonus the hormone will effect the reestablishment of a proper circulation and the subsequent secretion of urine and excretion of the retained waste products. Moreover, it will raise the blood calcium level which is frequently found to be low (to 3.5 mgr) in glomerulonephritis and thereby arrest the irritability of the muscles. The regulating effect of the parathyroid hormone upon the activity of the heart may be mentioned too in this connection.

NEUROINIDIA

J. Henry Dowd, M. D.
BUFFALO, N. Y.

Neuroinidia is not a new waltz, a delicious morsel of food, nor is it a hormone from some ductless gland. It is a Greek word signifying nerve starvation and characterizes the same condition in the nerve cells as does hemoglobin and a red cell count in the blood.

Nerve cell nutrition is nothing new; close to a century ago it was pointed out, and can be found in any work on physiology today; nerve cells have a nutrition the same as has blood, bone, muscle, etc.

We fully realize the importance of blood examinations; we are aware of the rapid recovery of patients with anemia when iron is used. Absolutely the same results ensue when nutrition is found low in the nerve cells and it is supplied artificially.

Of course red cells are absolutely essential to life as carriers of nutrition to the most remote parts of the human body, but as compared with the nerve cells, they (reds) would be the same as a freight train loaded with supplies for a starving community, but having no engine or motive power to move them. In other words, the nerve cells, of which the brain is composed, furnish not only the motor power for the red cells, but power for every organ and gland in the human body. Thus it may be seen that the process of digestion, assimilation and metabolism; the action of the heart, lungs and kidneys would cease if deprived of the power furnished from the brain and sent to the remotest parts through the various nerve ramifications.

But its function does not end with motion sent to the various organs; it furnishes resisting power to every tissue, and especially the mucous membranes; in fact, to give it due credit, it might be said truthfully, with the help of that great biologic force, the mind, the brain is the seat of all life of the animal kingdom.

Today we know that anemia need not be guessed at from facial appearance, etc.; a very few minutes with the urine, if albumin is found and Bright's disease, inflammation (as gonorrhea, pyelitis, cystitis) and certain heart conditions can be eliminated, anemia is the cause. This simple test is as positive as the most careful examination brought forth from any of our laboratories and can be quickly made by any one.

Divine Providence in the creation of man arranged for a reserve to be established in the brain cells for a time of emergency when from disease or otherwise food could not be taken by mouth to supply the required energy necessary for the maintenace of life. This opinion seems to be verified by such men as Prof. Shaw, who in his work on Nervous Diseases, in speaking of neurasthenia, says, "This unstable state of the nervous system depends upon some defect in the neurones to assimilate and store up nutrition in sufficient quantities and with sufficient rapidity to carry on easily and fully the calls for energy."

It is just this very point that should receive emphasis, and especially today when ninety-five per cent of the American public are living far in excess of what was ever intended by nature. We know, and they ought to know, that every action, deed, word or thought comes from the brain, or that region, and the more these factors are brought into play, the greater the calls for energy which is supplied from nutrition.

But nature is kind, if we but heed the calls.

Outside life, that is, in the case of machinery, rest at times is the most essential necessity. A locomotive, an automobile is rested for a time lest the steel construction undergo changes that might impair its usefulness. If insufficient rest is given the human machine, rest so that the batteries (brain cells) may recharge themselves, the reserve must be called on.

When this condition arrives, and if it is allowed to go unchecked for any time, sooner or later depletion must occur which is accompanied by a train of symptoms described as neurasthenia.

Dr. Colton in an article along lines of nerve trouble some time ago summed up the condition by saying, "Without the nervous system there would be no aches, no pains, but without the nervous system there would be no life."

It is a well established fact, at least 75 per cent of the ills of the human race today is functional in nature; that is, there is no underlying pathological change to account for them.

But as with all things that occur, where any abnormality is evident, there is a cause and it is a search for this cause that has lead to many of the theories of the past and present, especially the latest one: local foci, which, of course, are always found in the locality of the man's chosen field of practice.

Taking into consideration that practically every symptom displayed by these cases that might be termed as obscure is referable to the nervous system (pain predominates in fully 95 per cent of them), the writer without fear of successful contradiction must say that at least 90 per cent of them are due to some interference with nutrition, either blood or nerve cell, with the latter predominating ten to one.

We must acknowledge one thing, even though the statement was made by a layman, the late Chief Justice of the U. S. Supreme Court, "A medical diagnosis even by the most expert is little more than a good guess." But we and the patient also can tell very quickly whether this guess is correct. If we are right and our treatment is rational, relief is prompt, or there is a change for the better, if wrong, there is no change.

The sweeping epidemic that has passed over this country during the past few years regarding local foci of infection, that is, that every pain, ache, even fractured bone, etc., is due to the absorption of a poison from some locality, happy to say is abating. Of course to the eyes of the specialist, all the patients recover. That they do, from the operation, will be admitted, but from their condition (illness) not one in a hundred receive any improvement whatever; in fact, many are made decidedly worse. When we read such opinions as Prof. Pepper, U. P., who says it is a fad, and the various editorials appearing from time to time in medical journals, it would seem that the writer may not be so far amiss in the aforesaid remarks.

In 1896 the writer, while doing some experimental work along the lines of the alkaline phosphates, discovered that a rise or fall in this end product was greatly influenced by the state of the nervous system of the person under observation. Invariably a plus index, as it is called, brought the information that the patient was in a high state of nervous excitement, whereas, on the other hand, when it was minus, or low, they displayed an exactly opposite set of symptoms, the chief of which was fatigue.

Looking at the findings from a practical standpoint it appeared that the plus index demanded sedatives, the minus nutrition. That these contentions were true, and hold good today as they did some years ago, can be easily proven by any one in a few minutes; 95 per cent. of cases of a functional nature will respond quickly to medication directed at the true cause.

(It must be thoroughly grasped that the phosphates under consideration are the alkaline which are only precipitated by an alkaline solution and appear under the microscope as crystals. The earthy, that are at times found in freshly passed urine or show on boiling have practically no clinical significance. If they are present in any perceptible amount they must be filtered out before making the index.)

Although these investigations were carried on some 25 years ago 12 years elapsed before giving them to the profession; the original articles appeared in the *N. Y. Med. Record* 1908-1909-1910.

In establishing what might be called a normal index for a person, the second sample of urine passed in the morning was used, generally about 10 o'clock. At this time the nervous system has been at rest during the night; the elimination of

the alkaline phosphates are at about their normal range for the person under observation.

Fill the phosphatometer with urine to the letter U, add solution* to S, shake thoroughly and set aside for ten minutes.

When the precipitate remains at N. P. (Phosphatometer) in a fairly solid mass, and especially if the crystals are normal (having well formed fronds), the nervous system, no matter what be the symptoms, may be eliminated as a factor in causation.

Dr. Grover W. Wende, Prof. Dermatology, U. B. suffering from brachial neuritis for six weeks, consulted the writer after all sorts of medication both internal and external for over six weeks. Careful examination of the urine revealed nothing wrong, the index registered N. P., solid with A crystals. Advice was given to see a surgeon, as there was undoubtedly pressure on the nerve. Being a doctor and having heard of some marked cases of relief from a phosphorus mixture, he took it for two weeks, but with absolutely no relief. Finally a surgeon was consulted who found pressure, relieved it and in one hour the pain had ceased entirely.

The writer has observed hundreds of cases where there were most aggravating symptoms pointing to the nervous system, yet the index registered N. P., in all these cases some other condition was found, such as nephritis, beginning tuberculosis of the bladder or kidneys, malignant growth, etc.

When the precipitate remains above N. P. in a fairly solid condition, nutrition is being withdrawn from the reserve in excess, it is due to a hypersensibility or irritability of the nurones and is accompanied by more or less high tension in the nervous system; generally speaking, a high blood pressure will be found in this condition. As to the treatment much depends on the length of time the case has existed. If it is acute, sodium bromid in the elixir valerinate of ammonia is best; if it is chronic some deep seated sedative.

Mrs. S. Sciatica for about six weeks; pain very severe at times. All sorts of treatment, but no relief; when tonsil removal was suggested she changed doctors. Careful examination revealed nothing wrong except an index 75% plus. Bromide of sodium, grs 15 in one drachm of Elix. Val. Ammo. every three hours in water relieved her in two or three days; the pain has never returned (5 years).

Mrs. G. Brachial neuritis over a year's standing, almost constant treatment with no relief. No pathological condition found; index 125% plus. Bromide of gold and arsenic, ten drops three times daily increased gradually to 20 brought relief about the tenth or twelfth day; in two weeks there was no pain; she has not been bothered in 3 or 4 years. (The bromides and valerian had been used in this case, they were not penetrating enough to catch the deep centers.

It might be said positively that, in all cases of functional or other conditions in which the nervous system is a factor, at the start the index would show plus; that is, that the reserve was being drawn upon.

Looking at things from a rational standpoint, but one conclusion can be arrived at: where there is a constant withdrawal from a reserve without repletion, sooner or later only depletion can take place; such we find in the nerve cells, such is shown by a low or minus index.

At times it is found that the urine scarcely changes color when the alkaline solution is added, or there may be a precipitate that will not fall, or falls below N. P., even to 95 per cent. If the crystals are examined with such a condition, in practically every case they will show a marked change from normal; there will be no fronds whatever. In this condition the nutrition is not only low, but what is present is of a very inferior type. This is a finding that will be evident in at least 90 per cent. of all cases of a functional nature; that it is the cause can be easily and quickly shown. All one has to do is to supply nutrition artificially and test the case, say in three or four days. The change in the appearance of the crystals will be evident to the most skeptical, and an increase from 20 to 25 per cent. in precipitate will be evident.

But let us go a step further, the patient will report that they are greatly improved; "if finding the string is proof of the pudding," the microscope and the individual has proven the case.

The following is a brief illustration:

Miss S., age 33, public stenographer. This young lady, like most girls of today, had burned the candle

*Mag. Sulf, Ammo. Chlor. Water of Ammonia (10%, common kitchen variety) of each one ounce, Water 8 ounces. Set aside for a day or so that thorough saturation may take place. This is a cheap solution and can be made by any one in a few minutes.

at both ends and as a result she arrived complaining of being so fatigued it was with an effort that she was able to get about. Insomnia was marked; constipated, constant backache, and a leucorrhea that at times necessitated the use of a napkin; her eyes also gave her considerable bother, although properly fitted with glasses. In the six months that she had been under observation she had lost her tonsils, several teeth, had an operation for a tumor, and lastly an abdominal section, being told she had an intestinal kink. No relief whatever was observed.

Careful examination revealed nothing of a pathological nature present but an index 90% minus. She was placed on the following prescription: Res. Podoph. grs. 3, Fl. Ex. Valerian Oz. 1, Comp. Phos. Mixture, Oz. 2. Half a spoonful in milk 20 to 40 minutes after meals. In three or four days she reported improvement, in a week she was sleeping well, leucorrhea was lessening; in two weeks she felt as well as she had in years. At this time the index was 10% minus with crystals all practically normal.

This is but one case of scores, yes, hundreds of similar cases seen by the writer in private and consultation practice. It is true they do not all show a minus index, but fully 90 per cent. do, and with almost similtr results in fully 95 per cent. of them, can there be much questioning of the opinion that the cause instead of being a local focus, was due to nutritional changes, especially starvation in the cells?

Another case, and it should demonstrate the great value of the index and appearance of the crystals to the specialist:

Mrs. M. Sudden aphonia; she could not speak above a whisper. A prominent laryngologist diagnosed the condition as paralysis of the left vocal cord, and treatment was given every few days for about two weeks, but without result. She was referred to the writer for an index. This was found 75% minus and practically all crystals E (hysterical). Advice was given to place her on Fl. Ex. Valerian and Comp. Phos. mixture, each 15 drops in milk after meals. In three days the voice returned; in five days she was talking as well as ever; it never relapsed.

Many changes have taken place in the treatment of suffering humanity during the past 40 years of my association with this class, some have remained with us, some were short lived. With the Phosphatic Index the writer is prone to agree with the late Dean of the University of Buffalo, who, in discussing this subject before the N. Y. State Medical Society some time ago, said, "The Index has come to stay; it has given me results that have been most surprising."

437 Franklin Street.

SURGERY IN BUDAPEST, HUNGARY*

MARCUS H. HOBART, A.B., M.D., F. A. C. S.

Assistant Professor, Department of Surgery, Medical School, University of Illinois; Attending Staff, Cook County Hospital and St. Luke's Hospital, Chicago and Evanston Hospital

EVANSTON, ILL.

After spending the summer doing postgraduate work in practical surgery in Budapest, Hungary, it is of interest to make a comparison of their surgery with that of the United States, in quality and quantity of work done, and to consider how much work and what kind can be had by a visiting American doctor. As to the first point, the Hungarian surgery compares very favorably with that of the American surgeons, and I believe that is as far as one should go. Their best surgeons are very skillful, some of them speedy and others rather slow. Their internes and young surgeons are no better, perhaps no worse, than ours.

There are four or five outstanding surgeons in Budapest. Purposely I am omitting any names. I had heard of only one of these in America and, strange to say, he was not considered best in his home town, either as to his technique or as to his personality. The chief way we Americans have of knowing a surgeon is through his writings, which really do not reveal much of the character nor of the surgical ability of the man. But they do get him before the profession and the public. The same might be said of the profession and any other profession here or anywhere. Occasionally even the best criminals do not get their names in the *Chicago Tribune*.

On the whole, I thought that their sterile technique was inferior to ours. This is perhaps because they do not need to be careful, as they get very few infections anyway. I have seen a surgeon stop in his operation, put on a pair of rubber gloves, make an internal examination on another patient, then remove the gloves, run his hands through solutions and resume his operation. They scrub only half way to the elbow. They put on one gown and wear it for one operation after another, changing only their gloves in be-

*Read before Evanston Branch, Chicago Medical Society, Sept. 16, 1926.

tween. In several of the clinics cotton gloves, or no gloves at all, were worn. Only in a pus case do the operators wear rubber gloves or change their gowns afterwards, and the second assistant usually does not rate rubber gloves.

Their operating and ideas did not differ materially from ours, but in the matter of technique, preparation, etc., much that they did was foreign. In one clinic they scrubbed with soap and water fifteen minutes, then manicured, then scrubbed fifteen minutes more with soap and water, followed by bichloride of mercury solution, lysol solution, and alcohol. Next they took sterile hoods out of a sterile container and tied them on their own heads. After this a sterile gown was donned. The patient was brought into the operating room where were four tables in action. Nothing was over his eyes. Screams of frightened or half anesthetized patients mingled with the odor of chloroform and ether, and the sight of blood, pus and corruption. There was no false modesty. The patient without respect to sex was stripped of all his clothes, including the outer layer of dirt over the operating field, and was bound hand and foot on the operating table, pads being used to protect both radial nerves. The field was cleansed with ether and alcohol and painted with "Kabala," a special preparation of iodine which was alleged not to burn. This was done before the anesthetic, if a local, otherwise after. The sterile drapes were sewed to the skin by an assistant. Then the operations were performed by the head professor with great dexterity and speed, by his assistants with lesser degrees of accuracy, or by the interns with the usual fear, trembling, and blundering witnessed in their contemporaries in this country.

Thyroid operations were done with this same carefree preparation, which would no doubt make Dr. Crile roll over in his bed, always under a local anesthetic with the patient sitting up and head thrown back. The operative technique was beautifully done, usually both upper and lower thyroid arteries were exposed and tied and then the gland, or such portions of it as were required, was resected.

Breasts were removed, using Kocher's incision in one clinic and an elliptical in another. Gall-bladders were usually removed. I saw none drained. The position of the patient was ideal, for excellent exposure was obtained by placing a large sand bag or two, like the old sausage shaped sofa pillow, directly under the lower thorax, thus partly raising the upper trunk, so as to push the gall-bladder and liver forward almost out of the wound, and lower the intestines by gravity. In one clinic the common duct was opened on suspicion. Appendectomies were invariably done with McBurney's incision and no other organ examined at the time. Bassini's operation was used in inguinal herniae.

The bone work which I saw was on the whole very much behind ours, as no electric saws or drills were used. But their knowledge of anatomy and surgical anatomy was appalling. Even the youngest assistant recognized the gemelli muscles when they saw them, or realized the location of Winslow's foramen, or knew that there was an inferior mesenteric artery and where. One assistant twenty-eight years old, had been a doctor eight years, taught anatomy five years, pathology three years, and dissected every afternoon for two years since graduating.

Brilliant work was done. I saw especially good work done on goiters and gall-bladders. The thyroid seemed to come out almost bloodlessly, while the gall-bladders popped out like the famed sweet potatoes in the Georgian March. Little concern was exercised when a cystic artery bled, in fact, in one clinic they cut it first before ligation and watched it spurt to make sure that they had it.

As we learn more by our mistakes, so perhaps the apparent errors of others teach us what not to do. I saw two patients with a foul purulent empyema as a result of perforation of the esophagus by the attempts to dilate strictures due to swallowing potassium hydroxide. From one of these we obtained quarts of pus. As the solution of KOH is used by many of the poor for cleansing in place of soap, it is easily obtained and is a favorite method of suicide, though painful. Since there average twenty suicides a day in Budapest alone, more than any place else in the world, the KOH was almost at a premium for self-inflicting death.

A woman came in one afternoon with an acute abdomen. The young doctor diagnosed ileus, but not severe, and she was not operated on until the next day when the fever was high and her belly distended. A McBurney incision was made in order to do a caecostomy for drainage, and

although a purulent peritonitis was present, simply a caecostomy was done, even though very little fecal contents or gas was obtained. Two days later the autopsy showed a perforated gangrenous appendix.

A man with epigastric pain was given a large barium meal for x-ray examination. One hour later he died quickly after severe pain and autopsy showed a perforated gastric ulcer the size of a dime, due to the load of barium.

A man with a limp was diagnosed ununited fracture of the femoral neck. At operation a solid bony union was present, but a coxa vara had resulted from the upward slipping of the lower fragment in the neck before union. The x-ray was considered to blame for this.

A child of six years was operated on for "unreducible" supra condylar fracture of the humerus and most of the lower end of that bone removed.

I saw the cleverest work one day in the eye clinic, where Professor Emil Gross, one of the foremost, if not the best, eye man in Europe, and his assistants did in succession six cataract operations in less than an hour, all under local, one in a boy six years old. The way that great professor handled that tiny boy would have brought hot tears of envy to the eyes of a Montesori Kindergarten teacher.

In considering the subject of surgery for Americans in Budapest, the important question is, "Can an American get practical work there?" The general answer is, "Yes, he can." If by that an American surgeon or embryo surgeon thinks that he can go to Hungary, pay down so much cash and be turned loose among the unfortunate Hungarians and hack, chop, and saw to his heart's content, he is wrong. What he can do is to go to the head surgeon at one of the clinics or hospitals, of which there are several, and, preferably with a letter of introduction, ask the surgeon if he can work in his clinic. If the surgeon says "Yes," then the American can go without further bargaining. However, it is best not to be too trusting, but to make his contract as he would if purchasing anything else. Usually the chief surgeon will promise so many operations a month or a week for so much money and it all sounds very rosy, although gilt edged. Still the difficulty is not over. The operations may be boils, ingrown toenails, or sebaceous cysts, and very little of that. In this case it would have been better to have stayed in Vienna or enjoyed Paris, or even stayed at home. On the other hand, the surgeon may have a good many major operations and be willing to allow the American to do some each day or so many a week. This would be most satisfactory. Then, too, the amount and kind of operation depends on the ability of the American in part, or at least upon the surgeon's or assistant's opinion of his ability. In fact it is a good deal as it was when we were internes at the Cook County Hospital, the amount and quality of the operations which the interne was allowed to do varied with the generosity of his attending man and the latter's opinion of the interne's ability.

Excellent urology can be had, and practical cystoscopsy where one can learn to catheterize ureters and see more tuberculosis of the bladder at the same time, than in many places in a year. But the best is the cadaver work where a fresh one can be obtained daily, and an occasional excellent instructor be had. Each afternoon can be spent by repeating operations on the stomach, thyroid, gall-bladder, bones, or anatomic problems can be solved. This alone is worth the trip to Hungary.

And so the summer passed with work from 8 A. M. to 8 or 9 P. M., with a sandwich for lunch while going from one clinic to another or while waiting one's turn in the cystoscopic room. The Hungarians were excellent people, most polite, yet somewhat aloof; friendly, but calculating. The "rich" Americans were there to be used and this was the Magyar's opportunity. They thought the Americans must be crude, for did they not come all the way from America to learn the first principles of surgery? They judged American surgeons not by the Mayos, Murphys and Kanavels, but by the handful of half-baked, mostly Semitic novices who came there to glean the rudiments of anatomy from their abundant cadaveric supply. Their customs, manners, and speech were different, but they were extremely polite to the stranger within their gates.

636 Church Street.

EARLY DAYS AND EXPERIENCES IN PSYCHIATRY—1870-1900

RICHARD DEWEY, M.D.
PASADENA, CAL.

In 1871, when I became an assistant physician at the State Hospital for the Insane at Elgin, I had finished the usual medical course, had had a year of hospital experience and practice and also a year of study and practice in Germany; but when I asked myself what I knew about insanity, I confessed that I had everything to learn.

LACK OF INSTRUCTION IN PSYCHIATRY

If I speak of this, it is only because my experience was typical of that of the medical practitioner of that day. His early education in psychiatry was neglected. In most of the colleges of our land, the medical graduate could complete his entire course without ever seeing a case of mental disease. If he obtained any experience in this line, it would be only through his own initiative. Psychiatry was not taught, and the state institutions of Illinois were remote from the medical centers and remote from the thought of the faculty. This was true of the country as a whole. Insanity was a thing apart: anatomy, physiology and pathology, as applied to the psychoses, left a wide gap which had to be filled, and anatomical search of the brain yielded little light on insanity. The necessary advance in cellular pathology, microscopy, in section-cutting and staining and in bacteriology was still far in the future, so was the understanding of mental mechanisms and complexes that have been since unraveled. The physical basis of mental disease, the connecting of the psychoses with certain definite, cellular or biochemical pathologic changes, was not possible with the powers of investigation then attainable.

ABSENCE OF RESEARCH IN FORMATIVE PERIOD

Research was rife in the older European countries, but in our new and incomplete stage of development, the time had not arrived for it. Indeed, criticism was encountered of such work as was done; Professor Westphal of Berlin in the Virchow-Hirsh year book of 1874 criticized the cuts in the *American Journal of Insanity* for July, 1874, in an article on the "Pathology of Insanity." He said that the illustrations in this article were *"so gut wie gar nichts"* and expressed ironical envy of the author. E. C. Spitzka also, in his textbook, commented on *"arte facta"* appearances in photo-micrographs which resulted from faulty manipulations and were not true pathologic observations.

The institutions for the insane were in change of medical superintendents, who were necessarily absorbed with executive duties. The institutions were not provided with equipment, laboratories in which to work, or instruments and apparatus. The medical and nursing staffs were inadequate; there were no internes, and each assistant had several hundred patients to look after. The *Journal of Nervous and Mental Diseases* had just begun its important career in Chicago, which was later continued in New York. This journal owed its existence to the scientific enterprise of Dr. J. S. Jewell, professor of nervous and mental diseases in the medical school of Northwestern University. Dr. H. M. Bannister was an able editorial coadjutor. This journal complained editorially of "too little zeal shown by American alienists" (April, 1878) and feared "that asylums would not bear close scrutiny" (July, 1879).

INCIPIENT STAGE OF DEVELOPMENT

An idea may be gained of the stage of progress at the time by a few illustrations. The standard text-books were those written by Bucknill and Tuke, Maudsley, Griesinger, Esquirol, Isaac Ray on Jurisprudence, Hughlings Jackson, Krafft Ebing. Charcot's "Maladies du Systeme Nerveux" did not appear until 1873. The study of localization of the brain was in its beginning. The researches of Broca in France and of Ferrier in England were becoming known. Yet there was little knowledge in America of the keen activity of continental workers. The agency of syphilis in tabes and general paralysis was suspected but not generally recognized. In America, Hammond and Spitzka had produced text-books. Beard had described neurasthenia.[1] Classification of psychoses was at that time made along traditional lines, and labels were applied to cases instead of integrating and differentiating them, as is done today. Krafft Ebing's description of paranoia was not written until 1879, and Kraepe-

1. A fact not generally known, recently unearthed by Dr. Bassoe, is that Van Deusen of the Kalamazoo state asylum had previously reported the symptoms and used the name "neurasthenia."

lin's dementia praecox and manic-depressive syndrome were far in the future.

DIFFERENTIATION IN INSTITUTIONS FOR MENTAL DISEASES

In 1870, provision for the widely varying forms of mental diseases and defects was in its crudest beginnings. There was no separate provision for the criminal or convict insane and none for epileptic or alcoholic patients. These were indiscriminately thrown together in the state hospitals. The psychopathic hospital had not then been heard of. I discussed "Differentiation in Institutions for the Insane" in the *"American Journal of Insanity."* Dr. Jewell gave me an opportunity to write upon "Provision for Insane Criminals" in the *Journal of Nervous and Mental Diseases.* Today these requirements have been largely met, after a long struggle in enlightenment of the people, and efforts with the legislative power to secure appropriations.

CONDITIONS IN THE SEVENTIES

The conditions following the Civil War were such that there was a vast accumulation of mental disease, since during the war, nothing was done to meet the situation. After its close, the revelation of these aggregates of mental disease produced an era of agitation for relief throughout the country, and from that time until the present an intermittent effort has been in progress to endeavor to catch up with the conditions which have been rendered more and more urgent by immigration, natural increase of population, and one may say, the remarkable fecundity of the feeble-minded, who "increase and multiply," but do not "replenish the earth."

Neither Illinois nor the other states have ever overtaken the pressing needs. Everywhere the institutions are overcrowded, and hundreds are waiting to be admitted. About three years ago, the state of New York appropriated $50,000,000 in an effort to remedy the ills then existing, and an active campaign is now near completion there to overtake the crying need. Illinois is proportionately in need of legislation and appropriation analogous to that of New York.

ESTABLISHMENT OF TRAINING SCHOOLS

In early experiences in the care of mental diseases, it was found that there was an essential difference between the medical service for mental diseases and that of the general hospital, owing to the fact that every particular of daily life must be supervised for those deprived of reason. In their helpless condition, they were especially liable to neglect and abuse, and the attendants and nurses in their care needed training and instruction even more than those in general hospitals. The sense of this need led to the development of training schools, which began to be established in the early eighties. The first to gain formal organization and recognition had its inception under the initiative of Dr. Edward Cowles at the McLean Asylum and was a department of the Massachusetts General Hospital. His first trained class graduated in 1883 and was composed of women, but both men and women were included in the later classes. The first school in a state institution was started by Dr. W. D. Granger in the Buffalo State Hospital in 1883. Dr. Granger published a useful text-book, "How to Care for the Insane." In 1886, a school was inaugurated at Kankakee, and the first class graduated in 1888 after two years' training. Thereafter classes graduated regularly until 1893. In 1892, a political upheaval led to dismissal of the medical superintendent, and this particular training school came to an unfortunate end for the time being. But the movement for this great advance was definitely established, and was continued universally. Today there are sixty-one such schools standardized under the rules of the American Psychiatric Association, and a large number of such schools are now in process of standardization.

DEVELOPMENTS OF DETACHED WARD OR SO-CALLED "COTTAGE" SYSTEM

In 1869, a State Board of Public Charities was created, and two new institutions were established: the Northern Hospital at Elgin and the Southern Hospital at Anna. The secretary of the new board was Frederick Howard Wines. Mr. Wines had been interested in advanced ideas regarding construction of institutions for the insane. All such institutions up to that time had been built on the uniform plan of a massive central building. He believed in securing greater variety for the dwellings of the patients and felt that a two story building, more like an ordinary house, would in all respects serve the purpose for a majority of the patients and cost about one-third as much as the old style of building. This plan was given the name of the "cottage system"

and was popular with the laity. Dr. Wines had sought unsuccessfully to have this plan adopted at Elgin or Anna. When, however, the plans for a new institution at Kankakee were formed in 1877, it was decided to try the so-called "cottage" idea. Three such buildings were provided at first to receive 100 patients, and it fell to me, as medical superintendent, to carry out this plan. Experience with the three first cottages or "detached wards" was favorable, and at the next session of the legislature the sum of $400,000 was appropriated with instructions to build detached wards for 1,000 patients. These instructions were promptly carried out, and the result was general approval of the new departure. This method, the so-called "cottage," detached ward or "village" plan, met with immediate adoption in other states: Indiana, Ohio, North Dakota, Toronto, Canada and New York at Ogdenburg. Further extensions were made at Kankakee in the same style, so that after fourteen years, when I retired from the superintendency in 1893, the number of patients had reached 2,000.

ABOLISHMENT OF MECHANICAL RESTRAINT

I have elsewhere[2] discussed the struggle for the abolition of mechanical restraint in the care of patients with mental diseases. I refer to the use of straight-waistcoats, leather muffs and other appliances supposed to be needed in the care of disturbed patients, and also the use of "seclusion," which means confinement of a patient in his or her room with the door locked. It was found that after the middle of the century decided difference existed in respect to the use of mechanical restraint between the institutions of this country and those of England and continental Europe.

Without going into the details of this situation, I may say here that this difference was eventually found to have grown out of the methods under which institutions started in this country. It was natural to suppose that persons deprived of the use of reason would be lacking in self-control, and that being unable to reason, methods of control might be necessary in regulating and tranquilizing them; of course, this was true in exceptional cases. But the difficulty was that it was taken for a universal rule; restraint was not carefully supervised, but left to the discretion of attendants and nurses who, without training or especially reasoning in regard to the matter, would take what seemed to be the shortest, easiest and to them seemingly the best means, instead of employing *persuasion* and *milder methods.* The presumption with uneducated persons would be that an evil spirit had to be dealt with. Almost unconsciously, the ancient superstition of "demoniacal possession" would rule in the mind of the uneducated attendant.

The history of the nonrestraint movement shows that it originated with the philanthropic labors of the illustrious Pinel in France and with the humanitarian efforts of William Tuke, the Quaker reformer in England at the end of the eighteenth century, and was enforced and broadened in scope by Dr. John Conolly at the great London institution at Hanwell, where for ten years he furnished an example of absolute discontinuance of restraint. This sentiment and disposition extended and prevailed in England and on the continent almost universally.

The beginning was made in an unfortunate way in our country and the evil continued and grew by what it fed on, so that eventually a whole generation of the disturbed and destructive patients had grown up in our institutions, and restraint was taken for granted as *necessary;* it was even advocated by men in positions of authority in the institutions as being a proper means of treatment. But the inquiring spirit of the newer generation brought out the truth, and in 1890 it was no longer claimed, as it had been at first, that patients in American asylums were more independent and unruly than the subjects of monarchies, or that the climate of this country, being more stimulating, led to greater degrees of excitement and perturbation. By the end of the nineties, mechanical restraint had become a thing of the past or was used only in emergencies. It was seen that violence resulted more from injudicious handling than from viciousness in the patients themselves.

THE WISCONSIN SYSTEM OF COUNTY ASYLUMS

During the period I am reviewing, an active and able board of charities in the State of Wisconsin developed a system of "county asylums" unlike any to be found in other states, which were thriftily managed and subvented by the state treasury, which paid half the expense of

2. In paper read before the Medical History Society of Chicago, March 18, 1927, "Progress in State Care of Mental Diseases."

maintenance. These institutions were exceptionally satisfactory in a way, but were after all no exception to the rule that county boards of supervisors are by the nature of their origin suitable only for purely economic functionaries, not for the management of benevolent or charitable enterprises. The board gave their institutions the name of "semi-state asylums" and in a paper on "Outlines of State Care," read at Omaha in 1889, I expressed the opinion that "semi-state" care would eventually become "demi,-semi," and ultimately "hemi demi semi state care." The later developments have now shown that, although such institutions can well meet the material needs, the lack of medical oversight results in an absence of the study and treatment which should be made in individual cases. The medical care is provided by engaging a general practitioner who, as a rule, knows little of psychiatry and is apt to be chosen on account of his willingness to accept meager compensation and to render meager services.

EVILS OF POLITICAL MACHINE METHODS

The demoralization of the training school at Kankakee through political interference has been mentioned, and in this connection a statement of other instances of the same sort and their results may not be out of place. In the eighties when the Cook County Asylum was under the infamous control of Mike McDonald and a board of county commissioners, some of whom were afterward sent to the penitentiary, Dr. James G. Kiernan and Dr. S. V. Clevenger, men of competence and ability in psychiatry, endeavored to accomplish something in a medical and scientific way at the county asylum at Dunning. The efforts they made to improve the service brought them in conflict with the political ring in control. Dr. Clevenger reported some of the abuses to the medical profession and to the public, and shortly afterward was fired at while sitting reading in his room. The bullet narrowly missed members of his family. This occurred in the evening, the shot having been sent through a window. Dr. Kiernan, when seeking to suggest improvement in the conduct of an attendant, was asked by the man whether Kienan thought he had "pull" enough to get the attendant discharged, and thereupon the attendant landed with his fist on the doctor's person. The doctor was so "beaten up" that he was in bed for several days thereafter. Both of these medical officers shortly retired from their dangerous positions.

The election of Governor Altgeld in 1892 resulted in a clean sweep in the institutions. Altgeld was personally desirous of good management, but the men selected by him in some instances were politicians of the machine type, who prostituted their positions for personal benefit.[3] The situation at the present day is less disgraceful than in that earlier period, but it is known today that men of exceptional merit have been thrown out of their positions to give place to their inferiors in a medical and scientific sense. Governor Small, when he was "boss" of the political machine of Kankakee, used the employes to further his political ambition, sending the brass band composed of employes of the state hospital to play at political rallies. In the early nineties, when Governor Altgeld appointed the owner of a brewery and a saloon in Kankakee as a member of the board of trustees, excursions were advertised by the railroad, with Kankakee as their objective, and the mobs who patronized the brewery invaded the grounds of the hospital, creating a scandal which Dr. Clevenger endeavored to obviate by instituting rules for admission to the hospital grounds. These rules were found to be absolutely impossible of enforcement, and were totally ignored.

KEELEY CURE FOLLOWED BY INSANITY

In 1890, 1891 and 1892, the reception at Kankakee of eleven patients who had taken the Keeley cure at Dwight led to the question whether this treatment tended to the development of psychosis. The history of these cases showed that three of them might be regarded as the direct outcome of the treatment, and in the others it was properly regarded as an exciting cause with constitutional and other complications.

SOME NOTES ON THERAPEUTICS

In the olden time, there was excessive use of hypnotics and narcotics, not only in the institutions, but in general practice. Patients were often brought to the hospital drugged, in an ignorant and excessive manner; even in the institutions, there was routine use of sedatives and narcotics. The days of venesection and tartar

3. I obtained some of the facts here presented from a book entitled "The Don Quixote of Medicine" written by Dr. Victor Robinson with the collaboration of Dr. Clevenger.

emetic were long past, but chloral and conium (the hemlock Socrates drank) were used. Later it was found that other calmatives, warm baths, hot milk, or even letting the patient alone, would do as well. In those days, "chemical restraint" was often used with or without mechanical restraint. Bromides were universally and often excessively used.

The various "therapies" are too numerous to dwell on in the limits at my disposal. In regard to hydrotherapy, I shall mention experience with the prolonged warm bath. In an early day here and in Germany, it was forcibly employed, even bath tubs with tops that fastened down were used, but attendants soon found that force was not needed, and that it would hinder rather than help, because patients would willingly stay hours or days together in the tub, and would even sleep and eat there.

ESTABLISHMENT OF PSYCHOPATHIC HOSPITALS

Late in the nineteenth century, developments occurred which led to the establishment of the psychopathic hospital as it is known today. Until in the late nineties, this conception had existed only as an ideal. Griesinger described the essentials of such an institution in 1868, and in 1867 Dr. Pliny Earl said that a "psychopathic hospital" might be regarded as a probable future development.

The first actual step in this direction was taken at Albany, N. Y., where, under the advice of Dr. J. Montgomery Mosher, an able and experienced psychiatrist, a separate building was constructed for mental cases in 1902. "Pavilion F" was the name given to this first separate hospital and clinic for mental diseases under the direction of an able psychiatrist. In 1906, a psychopathic addition to the medical school of the University of Michigan was the culmination of years of effort on the part of Dr. William J. Herdman. This was the first psychiatric clinic in connection with a university medical school to be established. In 1902, Dr. Adolf Meyer was appointed director of the State Pathological Institute of New York, where both clinical instruction and research were carried on. From this position, Dr. Meyer was called to direct the Phipps Psychiatric Clinic of the Johns Hopkins University School of Medicine in 1913, I believe. Separate wards for the reception of patients with acute cases and for hospital treatment were established at Buffalo State Hospital at Kankakee, Pontiac, Kalamazoo, Bloomingdale, McLean and Butler hospitals. A state psychopathic institute was conducted by Dr. A. L. Singer from 1907 to 1911 at Kankakee. The Boston Psychopathic Hospital was opened in 1913, and ranks high as an institution of this character.

Some men who later attained prominence in the profession rendered service at Kankakee. At the opening, and for about three years, Dr. Harold Moyer was assistant superintendent. His choice of psychiatry as his specialty naturally followed his service there. Dr. Ludwig Hektoen, before taking his internship at the County Hospital, gained half a year's experience at Kankakee. Dr. Cassius D. Westcott served about two years as assistant physician, later specializing in ophthalmology, and Dr. A. J. Ochsner, during a summer vacation, gave instruction in microscopy. Dr. Adolf Meyer came to this country from Switzerland in 1893. I learned of him through Dr. Hektoen just at the time when Dr. S. V. Clavenger became my successor. On the recommendation of Dr. Hektoen, I advised Dr. Meyer's appointment, and he was given the position of pathologist by Dr. Clevenger. His subsequent career is well known. He served from 1893 to 1895. Through his influence, the exhibit of the German government at the World's Fair with some valuable apparatus was secured for the state hospital. Dr. Meyer inaugurated staff meetings and a course of instruction and improved the methods of recording cases.

R. F. D. 4, Box 296.

FUNDAMENTALS IN THE FEEDING OF UNDERWEIGHT CHILDREN*

L. W. SAUER, M.D.

EVANSTON, ILLINOIS

Not many years ago the problem of nutrition rested on the daily consumption of protein, fat and carbohydrate in such amounts that the twenty-four-hour ration would total a requisite number of calories. It was known that more calories were required if much physical work was done, also that water, and inorganic substances were necessary, and that children have higher caloric requirements than do adults. Since then the nutrition laboratory discovered that not all food-

*From the Pediatric Department of Evanston Hospital.

stuffs in a certain class have equal value—that some proteins are inferior to others—that their value for growth and tissue building varies with the animo-acid content. More recently the importance of the accessory food substances—vitamins—Fat Soluble A, Water Soluble B, Water Soluble C, and Fat Soluble D (antirachitic vitamine) was discovered. A well balanced diet should contain about four times as much carbohydrate as protein or fat, and about equal amounts of protein and fat. Children's diets must contain proportionately more protein than adults', for the building-stones—animo-acids—are most essential for the growing organism. Meat and milk contain abundant animo-acids which enter into synthesis of the protein of body cells. In estimating the value of any diet one must remember these facts, also, that its utilization by the body is never complete, but varies with the foodstuff, the digestion and assimilation powers of the individual.

The importance of a properly adjusted diet, ample rest and restricted daily routine are seldom sufficiently emphasized in the treatment and cure of a number of otherwise cronic or progressive ailments. These valuable therapeutic measures have long been employed, however, in the treatment of tuberculosis. Czerny of Berlin has such confidence in his five meal, high fat and protein diet in the treatment of tuberculous children, that he once made the claim that no tuberculous child in his clinic had ever developed miliary tuberculosis. Pirquet in his recent book on diet, says: "All the cures which, in the course of time, have been advised for tuberculosis, culminate in the therapy of feeding. Patients sent to the seashore, mountains, desert, or warm valley, all have in common good food and rest. . . Children must remain at table until all food is eaten. . . . The increase in weight of malnourished children on a five meal diet is usually very great in the first month, and after that lessens slowly." He concludes this chapter by saying: "The results have been so satisfactory that all other methods of treatment have been omitted."

The alarming incidence of physical unfitness among our young men during the draft, the simultaneous "discovery" of the "neglected" preschool child, and the valuable contributions on vitamins and diets from the experimental laboratories of nutrition led the pediatrician, school physician and health worker, about a decade ago, to focus their attentions on underweight children. Nutrition clinics, "malnutrition" classes and school lunch-clubs soon had their inception, and have done excellent pioneer work in the improvement of the nutritional state of many underweight children. Excellent treatises by Emerson of Boston, Charles Hendee Smith of New York and Kaiser of Rochester (New York) show what can be accomplished with large groups of underweight school children. The technique evolved by the clinicians Emerson and Smith was followed by Kaiser, who questions the permanency of the results obtained.

In the latest edition of "Newer Knowledge of Nutrition" McCollum says: "The system of diet which can be confidently recommended with assurance that it will go a long way toward improving the physical fitness of the nation is a very simple one. . . . It includes the best elements from those several systems of diet which have been thoroughly tested in human experience, and have been found successful." He recommends that every daily ration should include a quart of milk, some leafy vegetable and some raw fruit or vegetable. The remainder of the food-supply may safely be derived from any of our ordinary cereals, tubers, sugar and meats. To this should be added for children, cod liver oil and outdoor exercise in the sunshine. He reiterates that we should not be content to speak about a "normal" diet, but should recommend "optional" diets. This is especially true when we deal with underweight children. An extensive investigation conducted in a large institution for colored children found most of the children malnourished, and that they were being fed a diet which was deficient in quality and in quantity. His conclusions are: "improvement of the dietary is of the greatest significance for the welfare of a large percentage of American children of the present generation. His experiments prove that butterfat and eggyolk fat contain the unique dietary property which greatly promotes growth. Also, that milk and leaves of plants in a diet correct the defects of cereals, tubers, roots and meats. The discovery of these "protective foods" about 1915 opened a new era in nutrition. Terman, a year before, came to the conclusion that one out of every ten school children was suffering

from a grave form of malnutrition. Despite the increasing application of this newer knowledge of nutrition during the following years, Leete's summary in 1921 shows that 15 to 25 per cent of American school children are still suffering from malnutrition.

Cross in 1923 states that: "Investigation has shown that 96 per cent of the children coming to this country from the southern part of Europe have sound teeth, while it is well known that the teeth of 96 per cent of American children are defective. The trouble lies in great measure in faulty nutrition during prenatal life, infancy and childhood. A satisfactory diet is essential for the development of a sound set of teeth. Investigators have repeatedly pointed out that we derive a relatively larger part of our diet from refined cereal products, sugars, muscle meat and potatoes, a combination of foods which does not support satisfactory development, longevity and fertility in animals studied experimentally.

Improvement of the nutritional state of underweight children is one of the most important tasks of the practicing physician, not because parents realize that something should be done if a child is appreciably underweight, but because it not infrequently is the physician's most potent weapon in the prevention and treatment of a number of otherwise chronic ailments. Underweight children with disease of the heart, blood, urinary system or gastro-intestinal tract, including acidosis and diabetes should not be treated by these methods, as they usually require special diets and therapeutic measures. On the other hand, malnourished children with tuberculosis of the lymph glands, pleura, bones and joints; children with insufficient or improper food or rest; anorexia, the result of improper environment; goiter, without increased metabolic rate, secondary anemia and tardy rickets, yield the best clinical results. In fact, frequently, the weight increase and improvement of the pathological condition are coincident.

During the past five years we have used a vitamin-rich, 5 meal diet in several hundred children with the above enumerated ailments. If the regime is consistently followed for several months, the results are usually so striking that the diet and rest must be given the credit for the improvement. In contrast to other established methods it might be called an individual, intensive method for each child is started on the diet as soon as a diagnosis is made. With the aid of a special note book, containing a list of 100 calorie portions, the mother or nurse can readily compute the daily food intake. A two-day record each week aids in determining the quality and quantity of food eaten. If there is no progress, or if the underlying condition warrants it, the patient should be seen oftener than once a month. Children not confined to bed should indulge in the proper kind of exercise and play. Most of these children should be up less than ten hours a day. The rules we attempt to enforce are as follows:

1. The cooperation of the patient, with the parent and the physician is important.

2. The quantities of food should be governed by the age, digestive capacity and appetite of the child.

3. The child must consume enough of proper food each day to insure a consistent gain in weight.

4. No food should be served ice cold.

5. Milk may be flavored with sugar, malted milk, cocoa or vanilla.

6. Ample rest (breakfast and supper in bed), fresh air (window open at night), sunshine (sunbaths before the noon meal on warm days) stimulate the appetite, digestion and assimilation.

7. No food and very little water should be given between meals.

Smith's figures on 110 children in the nutritional class at Bellevue Hospital showed that 57 per cent gained on a 3 meal diet 1.7 times the average rate for their ages. The tuberculin test was positive in 54 per cent of his cases. His best case showed a gain of 12½ lbs. in six months. Most of his patients came from New York City's tenements, but he had the aid of trained nutritional workers in the homes, and such incentives as photographs before and after, prizes and rewards helped to keep up the interest of parents and children. The average gain in our last thirty children, suffering with the above enumerated ailments was over eleven pounds for the three month period of intensive feeding — about 5 times the average rate of gain. Fifty per cent of our patients had a positive tuberculin reaction. Our best case showed a gain of 19 pounds in three months. These results were due to the fact that in the evolution of our technique the prin-

ciples advocated by Czerny, Pirquet, McCollum, Emerson and Smith were incorporated. To bring a child's weight within normal limits for height and age and to keep it there is not only a prophylactic measure, but a potent therapeutic aid in the treatment and cure of a number of otherwise chronic ailments.

DIATHERMY IN UROLOGY
AN EVALUATION

C. Otis Ritch, M. D.
CHICAGO

The really tangible results from the use of diathermy in urology is diffused throughout a mountainous literature, most of which, needless to say, is supplied by the commercial houses. However, much scholarly and prolific work has been produced by diligent students of medicine. But some of these, I am inclined to believe, show a tendency to be carried away by their enthusiasm for this relatively new addition to our armamentarium. In an effort to separate the chaff from the grain, and place a value upon the use of diathermy in urology this study was undertaken. Negligible as well as satisfactory results are tabulated. Quite a bit of the material for this study was derived from Dr. E. W. White's service in the Urologic Department of the Alexian Brothers Hospital. To him I am greatly indebted for the privilege of reporting my conclusions of the cases that came under our observation at that time and are included in this survey.

The urologic conditions treated by diathermy are arranged, for the most part, according to the number of cases in each particular group.

Two cases of lymphangitis of dorsum of penis were treated with diathermy with apparently beneficial results.

Peri-urethritis was encountered but three times other than in a suppurative state, and it was felt that diathermy was of value but only in conjunction with other established forms of treatment.

There were four cases of plastic induration, plaques, or calcium deposits in the sheaths of the penis. In three no change could be detected.

In the remaining case, following four diathermy treatments the organ no longer had a dorsal curvature but remained straight during erection. I am not quite certain but that an associated peri-urethritis and folliculitis was overlooked at the initial examination. These being benefited by the diathermic treatments which permitted the organ to assume its proper shape during erection. I should certainly hesitate to say that any resolution of the calcium deposits took place.

Pain in the epididymes and testes, neuralgia testis, is not an uncommon accompaniment of chronic epididymitis, stricturous urethritis, seminal vesiculitis, and prostatitis. Nor is it a rare complaint when there is no demonstrable lesion in the urogenital tract. Three such cases are reviewed here. All were benefited, remaining free of the pain or neuralgia for varying periods of four to six weeks. These patients could be induced to return for treatment only when the pain returned.

Strictures proved obstinate to this modality. Fourteen cases were treated before its use was discontinued. The only notable result was in a case of impermeable stricture that was sufficiently "softened" that a filiform guide was later passed by the obstruction. Even here the diathermy might have played no part.

Six cases of the non-suppurative type of inguinal adenitis were treated with no appreciable value over other methods of treatment.

Ten cases of folliculitis were treated by this method. These apparently progressed more favorably than usually obtain with other forms of treatment.

Fifteen cases of gonorrheal arthritis were treated with gratifying results. The pain was controlled very promptly and their stay in the hospital varied from three to four weeks. On the contrary those who received only local applications to the particular joint or joints involved stayed in hospital between five and six weeks on the average. In those receiving local application and only occasional diathermic treatment no decrease in the time of their sojourn in the hospital was noted. All cases of gonorrheal arthritis received appropriate treatment to the urethra and adnexa.

Seminal Vesiculitis and Prostatitis. These structures are so intimately related anatomically and clinically that it is better to discuss them jointly. It is impossible to tell, with a great degree of accuracy, when an electrode is in coaptation with either or both vesicles; however, one

can be rather certain whether the electrode is properly applied to the prostate. For this reason one's conclusions are more uncertain relative to the vesicles than the prostate. The conclusions I now hold I may and possibly will change with time. I have seen no appreciable benefit in either of these conditions. Immediately following a diathermic application to the prostate one generally finds quite a noticeable decrease in the size of the gland. This is apparently of short duration as at the next visit the patient will complain of more discharge and prostatic symptoms. The urine contains more shreds and debris, the gland is larger and more products of inflammation can be expressed. One would expect just this condition to prevail, except the immediate decrease in the size of the gland. This decrease is not constant. One would expect to find a slightly larger gland since the cardinal virtue of diathermy is the production of heat within the tissue thereby causing an active hyperemia. I have not been able to use this treatment more than five times in any case of prostatitis. I find that patients will not submit to any form of treatment which they think aggravates their condition.

From my experience with diathermy in chronic prostatitis I have developed sufficient temerity to deter me from using it in the acute infections of this gland. In contrast to this view Greenberger and Greenberger[1] in a recent article state that they aborted 16 of a total of 19 cases of acute prostatitis and prostatic abscess. We should remember in this connection that a vast majority of cases diagnosed as prostatic abscesses will resolve under the expectant plan of treatment.

Acute Epididymitis. One hundred fourteen cases of acute epididymitis were observed; of these, 12 were non-specific; 102 were of gonorrheal origin. In this group of non-specific cases ten received diathermy, eight being benefited in varying degrees. The other two later formed abscesses and were incised and drained. One of these followed prostatectomy. The other was a case of stricturous urethritis dilated by a sound and developed the acute epididymitis. This case had evidently reached its maximum and was beginning to subside when the diathermic application was made. The following day a suppurating epididymitis was incised. It is quite possible that both of these were cases of pressure necrosis.

In the group of one hundred two cases of gonorrheal origin twenty-five were operated on (epididymotomy) and forty were treated along the usual line of hot sitz baths, hot fomentations, absolute rest in bed and elimination. The result of the diathermy varied from the most spectacular improvement to frank disappointment; but as a group their stay in the hospital was less than either of the other groups. In this connection it might be well to mention the more striking response to treatment of private patients to others. This is undoubtedly due to the fact that private cases report to one's office sooner than the service case who generally seeks relief after the affair is a fulminating one. In private practice I have, with but one exception, kept patients on their feet and at their work by daily diathermic treatments. The exception was a case which had been allowed to progress to too great a degree before reporting for treatment. This is of tremendous economic importance to the patient. Instead of having to pay for treatment and hospitalization with his salary often times discontinued, he remains on the job and has only the doctor to pay.

In infections of the kidneys, no value is attributed to diathermy.

In hypertrophy of the prostate, the method was found to be valueless.

In endo-cervicitis, the discharge became more abundant, the infection more active and the modality was very promptly discontinued.

Surgical diathermy is one of the fields of the greatest usefulness for this modality but is not within the scope of this survey.

Conclusions:

Diathermy is of value in lymphangitis.

Peri-urethritis is mildly benefited by diathermy.

It is of questionable value in penile plaques.

In neuralgia testis the symptoms may disappear or subside for days or weeks.

Little value can be attributed to diathermy in stricturous urethritis.

No benefit is to be expected in inguinal adenitis.

The results are not spectacular in folliculitis.

1. Greenberger and Greenberger, Abortive Treatment of Acute Gonorrheal Prostatic Abscess: The Urologic and Cutaneous Review, October, 1926.

Gratifying results are to be expected in gonorrheal arthritis.

No remarkable results were obtained in seminal vesiculitis and prostatitis.

Diathermy finds one of its greatest fields of usefulness in acute epididymitis.

No value is attributed to it in infectious diseases of the kidneys.

It is questionable if diathermy is of value in endo-cervicitis.

Its use in hypertrophy of the prostate is illogical and worthless.

Resumé

From the foregoing review it is evident that medical diathermy is of extreme importance to the urologist in the treatment of gonorrheal arthritis and acute epididymitis, especially is this true in the latter. In the other conditions enumerated the results are rather bizarre and uncertain.

5 South Wabash Avenue.

ROUTINE EXAMINATION OF THE HIP, SHOULDER, ELBOW AND WRIST

PHILIP LEWIN, M.D.
CHICAGO

In order to complete the series of examinations* of the chief orthopedic regions the following is submitted:

HIP

Anatomical location of disturbance as referred to by patient.

Inspection:

- Front View
- Back View
- Side View
- *Supine*

Movements	Degree	Pain	Spasm
Flexion with knee flexed	.....	.....	.....
Flexion with knee extended	.....	.....	.....
Fabere sign (Patrick)	.....	.....	.....
Abduction	.....	.....	.....
Adduction	.....	.....	.....
Rotation	.....	.....	.....
Circumduction	.....	.....	.....

- Is there a fixed lordosis?
- *Prone*
- Extension
- Hyperextension
- Hyperflexion of knee heel to buttock (Ely)
- Rotation of hip with knee flexed

Palpation

- Masses
  - Crepitus—coarse—fine
  - Areas of tenderness
- *Auscultation*
  - Crepitus—coarse—fine
- Neurological aspects
- Anatomical aspects, nerves, muscles, etc.

Roentgenograms:

- Stereoscopic of both hips for comparison
- A-P and L films of lumbo-sacro-iliac region

*Routine examination of the back and cervical spine, Ill. Med. Journ., March, 1926.

Routine examination of the knee and foot, Ill. Med. Journ., January, 1927.

SHOULDER

Anatomical location of disturbance as referred to by patient, i. e., acromion, deltoid region, biceps tendon, etc.

Inspection:

- *Front View*
  - Symmetry
  - Level of shoulders
  - Prominences
  - Depressions
  - Atrophy
- *Back View*
  - Symmetry
  - Scapulae—level—prominent

Movements	Degree	Pain	Spasm
Abduction to Rt. angle	.....	.....	.....
Abduction past Rt. angle	.....	.....	.....
Forward flexion	.....	.....	.....
Backward extension	.....	.....	.....
Circumduction	.....	.....	.....

- Put hand on shoulder
- Put hand on opposite shoulder
- Put hand on head
- Put hand in back pocket
- Button back collar button

Palpation

- Masses
  - Crepitus—coarse—fine
  - Areas of tenderness
- *Auscultation*
  - Crepitus—coarse—fine
- Neurological aspects
- Anatomical aspects, nerves, muscles, etc.

Roentgenograms:

- Stereoscopic of both shoulders for comparison. Occasionally necessary to repeat with arms abducted. A-P and L films of cervical vertebrae.

ELBOW

Anatomical location of disturbance as referred to by patient.

Inspection:

- Are normal bony landmarks visible?
- Swelling
- Discoloration

Palpation

- Masses
- Crepitus
- Tender areas

Movements

- Flexion
- Extension
- Pronation
- Supination

Roentgenograms

- A-P and L films

WRIST

Anatomical location of disturbance as referred to by patient.

Inspection

Palpation

Movements

- Dorsiflexion
- Palmar flexion
- Pronation
- Supination
- Radial deviation
- Ulnar deviation
- Circumduction

Roentgenograms

- A-P and L films

LACTIC ACID MILK IN INFANT FEEDING*

GLENN J. TYGETT,
(Formerly Anna, Ill.)
CHICAGO

The object of this paper is not to offer a substitute for breast milk, but to present to you what has proven to be one of the most successful methods of artificial feeding when mother's milk cannot be secured. Among the best medical minds of today it is universally recognized that under ordinary conditions human milk is by far the best, the safest, the ideal infant food. But in spite of the obvious and well known advantages of breast milk, there has existed from time immemorial the necessity for artificial feeding of infants. The occasional abandonment of the child, deficient secretion of milk, death of the mother, the wear and tear of childbirth on the physical strength of the mother and various other causes, often make it imperative that the physician plan some other method of feeding.

How is he going to meet this problem? What plan is he going to use to insure the safety, growth, and development of the infant? A new day has dawned in medical thought and in the light of its rising sun the problem of infant nutrition looms large on the horizon. It does not require a far stretch of the imagination to see how certain nutritional disturbances of the infant may have a detrimental effect throughout the entire developmental period of childhood. But aside from these factors already mentioned, we still have a tremendously high infant death rate in Illinois, presenting a challenge which the medical profession cannot ignore. The physician, then, who assumes the management of the feeding of an infant, has a great responsibility, and on the degree of efficiency in which he discharges it will depend the future, the growth, development and perhaps the very existence of the child. It is the duty, then, of the physician to evolve some scientific basis for infant feeding —one that is rational, well balanced, and that meets the caloric requirements in each individual case.

It has long been known that the infant cannot digest whole cow's milk in as large quantities as breast milk. Different theories have been held to explain this fact. Some have regarded the difficulty as being due to biological and chemical differences existing in the human and cow's milk, mainly in the fats and proteins. Others have assumed that the infant is not capable of digesting proteins and fats in the high concentrations in which they occur in cow's milk. These theories have not been supported by experimental evidence. But, nevertheless, the fact remains that whole, undiluted cow's milk is digested with difficulty by the average infant. Various modifications have been used to overcome this difficulty. The time honored custom, and one that is satisfactory in most cases, is to dilute the cow's milk with water, and make up the deficiency in calories by the addition of sugar in some form. Such modifications apparently meet the developmental and nutritional demands of most normal babies. But in many abnormal cases, especially the premature or athreptic baby, the amount of milk required is more than can be efficiently cared for by the gastro-intestinal tract. These cases require the use of a method whereby the quantity can be reduced to a minimum, but yet retain a high caloric value to meet the nutritional requirements.

The old theory of infant feeding totally ignored the mineral or inorganic salts of cow's milk. These salts, chiefly, the phosphates and calcium caseinate, act as a "buffer substance" which neutralizes to a great extent the hydrochloric acid of the gastric juice. Thus the gastric acidity is lowered and peptic digestion is at a minimum. Physiologists hold that a definite hydrogen-ion concentration is necessary for gastric digestion. Also that the HCL stimulates intestinal and gastric motility, opens the pylorus, inhibits bacterial growth, stimulates the flow of bile and intestinal secretions, and promotes the absorption of fats. Knowing these highly important functions of the hydrochloric acid of the gastric secretion, it is at once evident that any substance which neutralizes the acid secretion of the gastric juice will greatly interfere with digestion. This is precisely what the mineral salts of cow's milk does and in direct proportion to the amount of its neutralization will there be interference with gastric digestion. In the light of these foregoing facts, our problem is to offer a food which can be given to the baby undiluted, thereby retaining its high caloric value, and at the same time one that will not neutralize the acidity of the gastric juice. These properties, we claim, are possessed by whole undiluted lactic

*Address before Southern Illinois Medical Society.

acid milk. This preparation, plus the Karo corn syrup (which addition will be explained later) has a caloric value of nearly 30 calories to the ounce, while mother's milk has a caloric value of only about 20 calories to the ounce. It has been shown also that lactic acid neutralizes the buffer substances in cow's milk, and allows the hydrochloric acid full sway in the process of digestion. The gastric contents of infants fed on lactic acid milk, removed at the height of digestion, has been found to maintain practically the same acidity as those fed on human milk. In contrast to the foregoing facts, Marriott and Davidson found that the gastric contents of normal infants fed on cow's milk showed a hydrogen-ion concentration on only 1/20 that of normal infant's, fed on breast milk. Thus the superiority of lactic acid milk over ordinary cow's milk in regard to acidity, Marriott and Davidson have also shown that in the gastric contents of infants with acute infections the H-ion concentration is only about 1/10 that of normal infants fed on the same food. This probably accounts, in part, for the low food tolerance of sick infants and is an added indication for an acid milk with a high H-ion concentration. It has also been shown that lactic acid milk has marked power of inhibiting bacterial growth and is usually free from pathogenic bacteria. Marriott has inoculated such milk with pure cultures of B-coli and B. Dysentreiae, and found no growth at the end of 24 hours. Assuming then that so many cases of summer diarrhea are due to bacterial infection, it is reasonable to presume that lactic acid milk, by virtue of its being free from pathogenic bacteria should, if routinely used during the summer months, prevent many cases of diarrhea. This has been found to be true by those who have used it extensively.

Method of Preparation.—Lactic acid milk can be prepared by culturing with lactic acid bacilli, or by adding to cool cow's milk lactic acid (75 to 80%) U. S. P. The latter method is the only one that can be used in the home. The technique is simple and any mother with ordinary intelligence can carry it out with ease. One pint of whole cow's milk is boiled for five minutes, the scum removed, and allowed to cool. When cool, add to the milk one dram of lactic acid (75 to 80%) U. S. P. drop by drop. The mother should be warned to allow the milk to cool completely before adding the acid, and to add the acid very slowly. Otherwise large curds will be the result instead of the fine flocculent curd which is desirable. As is always necessary when feeding cow's milk the deficiency in carbohydrates must be made up by adding that ingredient in some form. Marriott prefers the commercial Karo corn syrup (Blue label). One ounce of Karo, by volume (2 tablespoonfuls), equals one ounce of sugar, and has a caloric value of 120 calories per ounce. Containing, as it does, a high proportion of difficult fermentable dextrin, it is the most difficult of the sugars to ferment, and therefore less likely to cause diarrhea. Two tablespoonfuls of Karo are added to the pint of milk, and well stirred. The whole is then divided into feedings and set aside for use.

Results Obtained.—Regardless of all theoretical considerations the ultimate value of any method must be gauged by clinical results. Marriott is the father of this method of infant feeding and with it has achieved brilliant success. He first used lactic acid milk only in feeding athreptic babies, but his results were so good that he later used it routinely in 90% of the cases in the St. Louis Children's Hospital. These included the usual run of hospital cases as athreptic, difficult feeders, premature infants, otitis media, pyelitis, pneumonia and other acute infections.

With the entire group the average daily gain in weight was 9/10 ounces. Perhaps his best result has been with the athreptic infants. His mortality, which was 78% in 1919, has fallen to 26% since the institution of routine feeding with lactic acid milk. His most recent results are even better according to some unverified reports. Scores of other men and institutions over the country are using this method of feeding and report uniformly good results. My own experience with it has necessarily been limited, but it has proven so satisfactory that I used it routinely with difficult feeders. Lactic acid milk is not offered to you as a panacea for all the ills of childhood, but it appeals to me as being a most logical and sensible formula for infant feeding —one that is scientifically based on known chemical and physiologic facts. I believe if you will use it you will not find cause to be disappointed with your results.

904 West Adams Street.

THE VIVISECTION OF CAPITAL CRIMINALS FOR THE ADVANCEMENT OF KNOWLEDGE IN MEDICINE

EDWARD PODOLSKY

BROOKLYN, N. Y.

The gradual realization of a series of certain facts will eventually lead to the establishment of vivisecting criminals convicted of capital crimes as a means of advancing medical knowledge. No doubt, such an institution will be a permanent one in the most enlightened age. The past experiences of the human race which led to the formation of a philosophy that demanded the sacrifice of the detrimental few that the useful many may live more comfortably and in less danger, and the ever-increasing desire to discard sentiment when it interferes with the working of economic measures, serve as fundamental supports to such a conviction. Human psychology has been and continually is adjusting itself to accept seemingly novel and radical conditions as necessary for the preservation and continued welfare of the social organism.

The adoption of vivisection of criminals as an economic measure would by no means be new, for it is known to have been practiced at various stages in the history of mankind. It did not survive as a permanent institution, because of the rather crude methods by which it was carried out, and because of the too great sentiment directed against it. While the so-called moralists asserted that the precepts of morality were being violated, the experimentalists maintained rightfully that it was by no means cruel to torture the guilty few to search after remedies for the whole innocent race of mankind.

The desire for medical truth had manifested itself very early in human experience. The practical utilization of murderers was commenced in early Egypt. Somewhat later, Ptolemy Philadelphus attained notice by placing at the disposal of the scientists of Alexandria criminals convicted for the worst crimes. The rise of Alexandria to a medical center in ancient times was in great measure due to this institution.

Several centuries later, Herophilus, the Chalcedonian and pupil of Praxagoras of Cos, and later Diocles of Carytus, the first of the Hippocratic school to distinguish himself as an anatomist, began to dissect criminals. These were gotten from the prisons by royal permission. With Erasistratus, Herophilus carried on his anatomical researches on the bodies of living criminals on a large scale, it being reputed that Herophilus alone dissected over six hundred criminals in these studies. The ancient apologists for the human vivisections of Herophilus and Erasistratus used to say that these anatomists were thus "enabled to behold, during life, those parts which nature had concealed, and to contemplate their situation, color, figure, size, order, hardness or softness, roughness or smoothness, etc." They added "that it is not possible, when a person has any illness to know what is the cause of it, unless one is exactly acquainted with the situation of all the viscera; nor can anyone heal any part without understanding its nature; that when the intestines protrude through a wound, a person who does not know what is their color when in a healthy state cannot distinguish the sound from the diseased parts, nor therefore apply proper remedies; while, on the contrary, he who is acquainted with the natural state of the diseased parts will undertake the cure with confidence and certainty; and that, in short, is not to be called an act of cruelty, as some persons suppose it to be, to seek for the remedies of an immense number of *innocent* persons in the sufferings of a few *criminals.*" Herophilus (Tertullian, De Medic., i, p. 6).

The next important stage in the history of criminal vivisection was enacted during the Middle Ages. In Montpellier and in other French cities, at this time, physicians vivisected criminals in their search for medical truth. In the Italian cities of Florence, Venice, and Pisa, this practice was sanctioned and practiced. In the Criminal Archives of Florence, Professor Andreozzi has discovered the fact that during the reign of Cosimo de Medici, condemned criminals were from time to time sent to the scientists of Pisa, there to be anatomized. Among the cases presented in his work, *Leggi Penali degli antichi Cinesi,* some are worthy of notice:

1. December 14, 1547. Guillo Mancini Sanese was condemned for robbery and other offenses. Sent to Pisa to be anatomized. *Ducatur Pisis pro faciendo de eo notomia.*

2. In the record of prisoners sent away, dated September 1, 1551, occurs this entry: "Letter to the Commissioner of Castrocaro that Maddalena who is imprisoned for killing her son, should be sent here, if she

is likely to recover, as it pleases S. E. that she should be reserved for anatomy. Of this, nothing is to be said, but she is to be kept in hopes. If she is not likely to recover, the executioner is to be sent for to decapitate her. * * * Went to Pisa, to be made an anatomy.

3. December 12, 1552. A man named Zuccheria, accused of piracy, was reserved from hanging, with his comrade, and sent to Pisa, *per la notomia.*

4. December 22, 1552. A certain Ulivo Di Paolo was condemned by the Council of Eight, to be hanged, for poisoning his wife. Sentence changed * * * to be sent for anatomy. Was sent to Pisa, January 13.

5. November 14, 1553. Marguerita, wife of Biajio D'Antinou, condemned to be beheaded for infanticide. * * * December 20, when she was released from the fetters and consigned to a familiar, who took her to Pisa to the Commissario, who gave her, as usual, to the anatomists, to make anatomy of her; this was done accordingly. *(Che la consegni, seconda il solito, al notomista, par farne notomia, come fu fatto.)*

Several other cases, from 1554 to 1570, are recorded, which inform us that two thieves, Paolo Di Giovanni and Vestrini D'Agnolo, were sent together by the Council of Eight to be anatomized, the Duke having written to say that they wanted, in Pisa, a subject for anatomy. After the date 1570 no more cases occur in the Archives. In all, thirteen criminals were delivered over for specific scientific research. During part of this period the great Vesalius and his pupil Fallopius, were carrying on their researches in anatomy and lecturing on this science.

After this period, the vivisection of criminals diminished to a very small scale. Now and then a vivisection was performed for some definite purpose. Such was the case when Henry II of France was mortally wounded by a splinter from a spear which had entered below his vizor and pierced his eye, and the surgeons, for the purpose of discovering the probable injury done to the king, cut off the heads of four criminals and thrust splinters into their eyes at the same inclination as the fatal one that had entered the eye of the king. Although this procedure was not altogether an economic measure, it was a little above the order of the Persian monarch who caused the heads of a number of criminals to be struck off so that his chief surgeon might closely observe the convulsions of the muscls of the neck at the instant of decapitation. A much more redeeming case was Dr. Jenner's venture into vivisection. When Dr. Jenner discovered vaccination as a safeguard against smallpox, King George III of England ordered that Dr. Jenner test his vaccination on six criminals who were awaiting the death penalty in British prisons.

Several generations ago, in France, a celebrated savant, author of a work on the effects of imagination, desired to prove his theories by actual practice. For the purpose of carrying out this proposition, he requested the Minister of Justice in Paris to allow him to try an experiment on a criminal condemned to death. The Minister consented, and turned over to the physician a murderer of distinguished rank. The scientist informed this unfortunate that several persons being interested in his family had prevailed upon the judge not to require of him the usual means of execution. His sentence, he was told, was therefore changed. "But," continued the physician, "you shall be bled to death within the precincts of your prison; your dissolution will be gradual, and free from pain." The criminal submitted to his fate, thinking that his family would be less disgraced through this procedure, and considered it a special favor to be put to death in this manner. He was accordingly made ready for the experiment. By conducting affairs cleverly he was readily made to believe that his veins had been opened and that his blood was flowing freely, whereas, he had been but gently pricked on the skin, and small fountains of water were placed about him, to simulate the flow of blood. Within a few hours the man was dead, and the doctor was satisfied with such a practical confirmation of his theories. Thus a criminal condemned to death, consented to die in a manner that was both useful to society and more pleasing to himself than had it been at the hands of the executioner. Nothing would have been gained with the latter method, but the physician's experiment helped more than anything else would have helped to demonstrate the practicability of suggestive therapy, which might as readily cure bodily ills as send a criminal from this world in a humane way.

Within more modern times the question of vivisecting capital criminals in the interests of society and science has come up for consideration from time to time in the various countries of Europe. Even in the United States there has been at various intervals earnest and serious discussion of this question. Among the most notable was that at a meeting of the Tri-State Medical Association, held at Peoria, Ill., October

3, 1893. At this time Dr. John S. Pyle read a paper entitled "A Plea for the Appropriation of Criminals, Condemned to Capital Punishment, to the Experimental Physiologists." Dr. Pyle suggested: "A building should be especially erected and every form of mechanical appliance provided for the prosecution of psychical inquiry and studies of the general nervous system. A body of expert physiologists . . . should be appointed to carry out the commands of the state. Every person interested in scientific studies or physiologic and psychical inquiry should be admitted to executions."

Several years later Mr. Rowlen introduced into the Senate of Ohio a bill proposing the vivisection of capital criminals. *(House Bill No. 135,* 71st General Assembly, Regular Session). It consisted of three long sections of which the following quotations will serve to show the substance:

That all persons sentenced to death by any court having jurisdiction in the State of Ohio, shall be held as subjects for experimental research; that such experiments should be conducted in the interest of science and society.

That the executioner shall be an expert physiologist, duly appointed and authorized by the State, and that such appointments to execute and conduct such experiments shall be vested in the governor and shall consist of one executioner and five assistant physiologists, with a like number of deputies, who shall hold their office for the term of good behavior, except upon proof of incompetency.

That no one shall be present at the experiment except the warden in charge of the prisoner, the executioner, assistants and deputies, and those who have duly qualified themselves to comprehend the experimental work.

The measures proposed by Dr. Pyle and Mr. Rowlen never went through, either because sentiment was too strong against them, or that they were not sufficiently refined to convince that society would be better served. If it is necessary to deprive a criminal culpable of a capital crime of his life, it must be done in a manner whereby the interests of society and science will be furthered. If, in such cases sentiment is directed against such a procedure, it is unjustifiable and entirely uncalled for, because it is opposing and interfering with the workings of an economic measure. The thought of the future that will sanction vivisection of criminals will do so with certain provisions. It is perhaps not too difficult to guess what they will be.

The following provisions are respectfully suggested: No person whosoever shall have his body experimented upon for the purpose of discovering a new truth or principle in medicine, unless such a person has committed a crime deemed punishable by execution. All capital criminals shall be consigned to special research stations, wherein they may be put under study and experimentation. No experiment on such a criminal shall be unnecessarily cruel, and all methods of modern science shall be employed to spare the criminal as much pain as possible. No condemned person shall be experimented upon with the sole view of depriving him of his life, but only until the point in question has been ascertained or discovered. If a criminal successfully survives the experimentation, and as a result thereof a valuable discovery has been made, that prisoner shall be considered for exemption from further experimentation, and assigned to some useful occupation for the remainder of life.

A careful study and consideration of the provisions suggested above cannot fail but convince that such an institution will prove far more useful and economical than the one we have at present. A man who is culpable of a capital crime has forfeited his life to Society against whom he has transgressed. Society must punish the criminal for her own interests. This is a moral procedure inasmuch as the interests of many are pitted against the interests of one. A punishment that consisted of depriving a criminal of his life simply as punishment for a grave crime is uneconomical and vengeful, despite what one may say to the contrary. An execution, next to war, is the most disgraceful procedure in a civilized community, for it is still an exhibition of primitive emotions and disregard of the ultimate good.

Of course, the law must run its course (an eye for an eye, a tooth for a tooth—), but a course in which Society realizes a minimum of benefit where it may realize a maximum of benefit, is, to say the least, unwise. A Society which utilizes a prisoner's life to better purposes than merely pure vengeance, is more worthy of the name civilized. The benefits derived are infinitely more when used to the better purpose, namely, investigation which will, in the end, benefit a great number of people. A life that has been made useful before it is extinguished, if it is necessary to extinguish it, serves Society

far more than a life which is extinguished without a thought.

What more moral and logical thing can be asked of a prisoner other than to dedicate a life which he has forfeited to mankind against whom he has sinned. It is not necessary that he die, but only that his life be put to the greatest good. Medical history is filled with the stories of martyrs from the ranks of the profession, and the life of any one was more valuable than all the criminals who have ever been executed. Not only more economical, but justified morally in every way would have been the utilization of criminals for research by which the entire race of mankind would benefit. It is only because of a sentiment that amounts to criminality progress which might have been possible has never been realized.

The problems of human health and welfare that beset us today are no fewer than previously. The cure for tuberculosis, for cancer, for pneumonia, *must* come. It will come, but its hastening can be effected if suitable means for extensive study were employed. There have been, no doubt, many criminals condemned to death who have suffered from these diseases whom we might have used towards better ends than death. There are many other problems that might find easy solution with the aid of experimental study on the bodies of healthy criminals condemned to death. There is nothing cruel about such experiments, they need not be cruel, they are not necessarily cruel. They are far more humane than outright execution. Moreover, they are morally and economically justified.

The establishment of the vivisection of capital criminals as an institution must eagerly be looked towards, for with such an advent, a most glorious era in Medicine will be ushered in, and with it an almost certain solution of the many problems of human health and happiness.

511 Jerome St.

BOX FOR TWO

She was a careless girl to put the subscriber on the wrong number. Being in a hurry, the subscriber promptly asked for a box for two.

"But we don't have boxes for two," said a startled voice at the other end of the line.

"Why, isn't this the theatre?" he inquired.

"No," was the reply. "This is ———'s, the undertaker."—*Medical Pickwick.*

EARLY BIRD GETS THE WORM—A MORAL

Said the little red rooster, "Gosh all hemlock! Things are tough.
Seems that worms are getting scarcer, and I cannot find enough.
What's become of all those fat ones is a mystery to me;
There were thousands through that rainy spell, but now where can they be?"
The old black hen who heard him didn't grumble or complain;
She had gone through lots of dry spells, she had lived through floods of rain.
So she flew up on the grindstone and gave her claws a whet,
As she said: "I've never seen the time when there wasn't worms to get."
She picked a new and undug spot; the earth was hard and firm.
The little rooster jeered: "New ground! That's no place for a worm!'
The old black hen just spread her feet, she dug both fast and free;
"I must go to the worms," she said, "the worms won't come to me."
The rooster vainly spent the day, through habit, by the ways
Where fat, round worms had passed in squads back in the rainy days.
When nightfall found him supperless, he growled in accents rough:
"I'm hungry as a fowl can be. Conditions sure are tough."
He turned then to the old black hen and said: "It's worse for you.
For you're not only hungry, but you must be tired, too.
I rested while I watched for worms, so I feel fairly perk;
But how are you? Without worms, too! After all that work?"
The old black hen hopped to her perch and dropped her eyes in sleep,
And murmured in a drowsy tone: "Young man, hear this and weep:
I'm full of worms and happy, for I've dined both long and well,
The worms are there, as always, but I had to dig like hell."
In our barnyard there are printers who complain about conditions;
For service and for better work are afraid to make additions.
They cut the price to get the work from big and little firms,
Meanwhile the old black hens are out and get the cost *plus worms.*

—Kansas City Graphic Arts Organization.

TAKING NO CHANCES

Sonny—"Must I sleep in the dark?"

Mother—"Yes."

Sonny—"Oh, then, let me say my prayers over again—more carefully."—*Detroit News.*

MILK INJECTIONS FOR PELVIC INFECTIONS IN WOMEN

Gellhorn (*New Orleans Medical and Surgical Journal*, March, 1926) alludes to the unsatisfactory reports of specific therapy in the treatment of ills to which flesh is subject, and calls attention to the decidedly beneficial effects of non-specific protein therapy as applied to many infections. This form of treatment, at first looked upon with askance by the general profession and derided by the laboratory worker, has proven so successful clinically that it is now considered by the medical and surgical leaders of thought and under appropriate circumstances employed by them with often astonishing results.

By protein therapy the cells of the body are stimulated to resist and to overcome toxic and infective agents. Moreover, it is held that abnormal cells, i. e., those not damaged beyond repair, react to stimulation more vigorously than do those which are normal. The effect of the protein injection is then to increase the power of the cell to elaborate those ferments and antibodies which neutralize bacterial toxins and hasten the absorption of inflammatory exudates by increasing the permeability of the vessel walls. The first effect of the protein injection manifests itself, within a few hours, in the form of a general reaction. There is usually a chill, followed by a rise in temperature which may reach as high as 105° F. In some cases there may be only drowsiness, increased perspiration, or slight nausea. After intravenous injections the general reaction is always more intense than after either intramuscular or subcutaneous injections. The fever subsides in from twelve to twenty-four hours and gives way to a feeling of intensified well-being which is noticed by the patients in practically every instance and grows even more pronounced during the course of treatment. Appetite and sleep improve, and the depression of general malaise disappears. The rise in temperature is regularly accompanied by an increase of leucocytes: 20,000 to 25,000 are by no means exceptional figures, at least after the first one or two injections. This hyperleucocytosis fades away within two or three days, to reappear, in milder forms, after each subsequent injection.

In addition to this obvious response of the whole organism, there is also a "focal" reaction at the site of the inflammation. In superficial infections we plainly see a transitory increase in swelling and redness, and by analogy we may assume that also foci hidden in the depth of the body become more swollen and reddened.

The number of proteins which have been used for clinical and experimental purposes is large. In actual practice only a few substances need to be considered; of these milk has become most popular.

Ordinary household milk is rendered fat-free by centrifugation and boiled in test tubes in a water-bath for ten minutes in such a manner that the test tubes do not touch the bottom of the vessel.

The milk is injected into the upper portions of the buttocks under the usual antiseptic precautions. The initial dose of 5 cc., the standard dose 10 cc., which is reached with the second or third injection and then maintained throughout the course of treatment. The interval between injections is from three to five days, in indolent patients occasionally only two days. One is guided largely by the clinical aspect of the case and the leucocyte count. When the latter has receded sufficiently from its peak, new stimulation is in order. The first injection is given no matter how high the original count was.

The general reaction sets in about six hours after injection. It used to be rather stormy in many instances, but since the employment of fat-free milk it has greatly abated, and chills and elevation of temperature are, as a rule, but slight, though hardly ever totally absent.

Of the various infectious diseases of the female genitals, gonorrhea of the tubes is the one which responds most readily to protein injections. This is all the more gratifying because the treatment of ascending gonorrhea, on the whole, is unsatisfactory. That in very exceptional cases, prolonged rest in bed, combined with conservative antiphlogistic measures, may bring about a cure cannot well be doubted; but how infinitesimal this chance is may be inferred from the immense number of operations which are performed daily for pyosalpinx or its sequelæ. Surgical treatment, again, offers relief only under certain conditions.

Gellhorn has treated all patients with tubal involvement by milk injections, as the result of which operations for pyosalpinx have become as infrequent in his service as they used to be numerous. He does not claim that every case can be cured.

IRRADIATION OF VESICAL NEOPLASMS BY REMOVABLE PLATINUM RADON SEEDS: DESCRIPTION OF NEW INSTRUMENT DESIGNED TO FACILITATE THEIR EMPLOYMENT

Joseph Muir

An improved method of treating neoplasms of the bladder by means of Removable Platinum Radon Seeds is described in this article.

Using the Removable Platinum Radon Seed it is possible to obtain scientific accuracy of the dosage delivered. Radiation is directed not only to the growth itself, but to the tissue surrounding it, in order to catch the mitotic cell. The placement of the radioactive units is made so that the "zones of potential tissue change" from each source do not overlay. The "zone of potential tissue change," or the amount of tissue that one seed can take care of when implanted alone and also when two or three centers are used so that intervening cells are subjected to cross firing, is described. The theoretical expose has been proved by clinical results.

Using the Removable Platinum Radon Seed not only are we able to deliver accurate dosage, but because of the platinum screenage all caustic rays are eliminated and necrosis and sloughing with intense shock to the

patient obviated. The fact that Platinum Radon Seeds are easily removed through the cystoscope after the required amount of radiation has been delivered makes this the method of choice since no foreign body is left in tissue after treatment.

The technic of application is fully described and illustrated. A point of great importance in using the Removable Platinum Radon Seeds is that after the first seed has been implanted through the cystoscope, its thread protruding from the portal of entry of the seed in tissue serves as a landmark and guide for the placement of successive seeds, so that the accuracy of placement of seeds through the systoscope is greatly increased. Also, should a seed be incorrectly implanted, it may be removed and reimplanted.

In view of the highly simplified technic as described, the treatment of vesical neoplasms by implantation of Removable Platinum Radon Seeds can be accomplished with as much scientific accuracy as any other urologic procedure.—*Jour. Urology, January,* 1927, XVII, p. 53.

LET THE SPECIALIST DO LESS, THE FAMILY PHYSICIAN MORE—A REMEDY FOR FEE SPLITTING*

Jno. O. McReynolds, in the *Texas State Journal of Medicine,* says:

It may seem strange that I should say, in this era of marvelous scientific development, that the medical profession is passing through the most crucial crisis of its history.

The danger lies not in an unresponsive spirit of investigation, for there has never been a time when so much talent and patient toil was so freely furnished in this field of study. The danger lies not in a want of sympathy and support on the part of the people and the concentrated wealth of the world, because never before has the preservation of human life held so strong a hold on the heart of civilization or commanded with such controlling force the accumulated gold of the earth. The danger lies not in any weakness in the essential elements of the science or art of healing, because never before have the fruits of this tree been better or more abundant, in the blessings they have brought. The danger lies in the corroding spirit of commercialism that is creeping into the consciences of men corrupting the consecrated character of professional honor, and dissolving the bonds of fraternal feeling—so essential to the full fruition of our promised destiny.

In the great warfare to preserve inviolate the lofty and historic ideals of our profession, there is a clear and grave responsibility which the specialist must meet and bear. He stands in the attitude of one who has passed through the regular college curriculum for the doctor's degree, and has served the allotted time in general hospitals or general practice, and then, in addition, has devoted a period of faithful study to some particular field of medicine or surgery. He has been generously accorded by the general profession and by the public, all of the consideration to which he is entitled; and in return, there should be demanded of him the highest exemplification of the finished physician and faithful friend.

Specialism, in these modern times, has encroached alarmingly upon that broad domain of the healing art, for centuries the acknowledged province of the family physician. Indeed, the practice of medicine has been divided and subdivided into so many parts, that the family physician can find but few conditions that are unprovided for by some of the various specialties of the profession.

Some days ago, I was consulted by a prominent citizen of New York, who told me that he had on his regular payroll no less than thirty specialists for himself, his wife and his children, and that his family physician, one of the most brilliant men of America, was consulted mainly for the purpose of ascertaining what particular specialist should be engaged for a given malady. And thus it transpires that the general practitioner, especially in the cities, is being converted into a mere machine for referring patients to other physicians. And here is the point where specialism touches the danger line in relation to the general profession and to the general public. If the family physician is thus deprived of his right to practice, and is simply consulted as to what specialist should be employed, then he becomes, in a measure, merely an agent for securing medical or surgical service.

And then, if this function, rather than the practice of medicine, should become his chief occupation, it is easy to see how the spirit of commercialism might take root and grow, as actual experience throughout the world will abundantly prove. And we find some very capable physicians, men who have attained high official positions in medical societies, asking themselves these questions: "What is wrong with the division of fees?" "What is wrong in paying a definite commission for patients referred?" "If a merchant can pay a commission on business secured, why cannot a doctor do likewise?" "If the patient must be referred to someone, why is it wrong to pay the family physician for his trouble and, in addition, reward him for his zeal?" "And if one specialist will offer a commission of 20 per cent, whose concern is it if another specialist should offer a commission of 40 per cent?" If automobiles and other expenses have trebled the cost of living for the general practitioner, and his own charges have not been advanced in forty years, and the number of his patients has been reduced by the inroads of specialism, why is it wrong to divide fees?"

Be it far from me to throw a single impediment in the pathway of that splendid hero of our profession, the family physician. The history of civilization has recorded the name of no one more worthy of the world's highest honors and truest affection. All the blessings of earth and the benedictions of Heaven have been surely and bravely earned by this faithful friend and

*Chairman's address, delivered before the Section on Ophthalmology Otology, Rhinology, and Laryngology State Medical Association of Texas, Fort Worth, May 8, 1923.

servant of mankind. Our duty to him is to consider well the difficulties that throng his pathway and render unto him without reserve, that full measure of justice and gratitude which he has won. And, remembering the lofty sentiments that have inspired his consecrated service, let us watch that we insult not his manly spirit by a suggestion unworthy of his life and character.

What, then, should be the attitude of the specialist to the family physician? Surely, it should not be the attitude of one who would propose to buy with money the influence of a high-minded man of science, entrusted with the sacred duty of guarding the life and physical welfare of his patient. Surely, it should not be the attitude of one who would propose that an afflicted child or a disease-stricken woman, should be practically auctioned off to that specialist who would offer the largest commission, or become a bargain between physicians, without the knowledge or consent of the patient who is vitally interested. Surely, this commercialism of human infirmities, so frequently practiced in secret, and in some quarters openly defended, cannot in the very nature of things secure the highest efficiency and the most faithful service. Such a system of clandestine agreements among physicians must inevitably debase the profession and make pecuniary profit, rather than honest merit, the basis of personal preferment.

But there is a way, and an honorable way, by which every physician can receive his just reward, and that is by a proper appreciation of the real function of the specialist. Reduced to its final analysis, the best and most useful duty of the specialist is that of consultant —a helper, a coadjutor of the family physician. The specialist should not be called upon to give those elements of treatment which could be reasonably relegated to the family physician. His labors should be confined to those features of professional service requiring that special discernment or dexterity which he is expected to possess. It is the duty of the specialist to lend his aid in unravelling the tangled threads of diagnosis, to contribute his skill in the surgical requirements of the case, and, as soon as possible, to return the patient to his home, under the care of his family physician. Thus an undue expense to the patient is avoided, and thus the family physician is reinstated in the case, so that he can receive for his services his own proper reward, and thus the specialist is relieved of unnecessary details and allowed more opportunity to extend his real usefulness over a wider and more fruitful field of labor. In fact, the essence of the remedy consists in utilizing to the fullest extent the personal service of the family physician, and in minimizing, as far as possible, the individual attention of the specialist. The remedy consists in returning to the family physician a large part of the medical treatment which has unnecessarily been discharged by the specialist. Let each receive his own remuneration for his own labor, but let the specialist do less, and the family physician more.

The second element of danger that is undermining the structure of our profession, is the too prevalent vice of unkind criticism. As the general profession and the public at large have accorded to the specialist in the various departments of medicine and surgery the credit of having attained some special familiarity with the subjects of their constant attention, it follows that this confidence involves an added obligation, not only to be just, but generous. And, as the specialist is thus constantly passing upon the work of the general practitioner, he has the fullest opportunity to commend or condemn. His essential duty is to help the afflicted, and I do not recall a case in thirty years' experience, in which it was necessary to encourage distrust of the family physician in order to render assistance to an unfortunate sufferer. Our field of activity is in the present and future, not in the past. Our great opportunity is in making hearts glad for whatever good we may do, rather than in filling them with regrets about things that cannot be undone.

WHY CHRONIC GONORRHEA IN THE MALE?

Pelouse (Atlantic Medical Journal, April, 1926) defines chronic gonorrhea as that in which the gonococcus persists for longer than six months. He holds that with careful treatment and proper co-operation on the part of the patient chronic gonorrhea in the male can be almost obliterated as a clinical entity.

By making the most generous allowances for the influences of the patient's own acts, there will still be found a composite picture that cries aloud for correction, for many of the forms of treatment in general use are not so potent for cure as they are for the production of conditions that lead to chronicity. Among those most frequently brought out are the following:

The passage of instruments or solid bodies into the acutely inflamed urethra.

The use of injections and irrigations under very high pressure. The use of substances in the urethra that causes great burning and a profound subsequent inflammatory reaction.

The administration of large doses of vaccines in early stages of the disease. The entrusting of all of the treatment to the patient without adequate instructions. The use of intravesical irrigations when only the anterior urethra was infected.

The use of silver nitrate instillations into the posterior urethra during the early stages of its acute inflammation.

The use of astringent injections whereby the disease is rendered latent from the start.

Pronouncing the patient safe to indulge in coitus without doing more than looking at his urine to determine cure.

The use of prostatic massage so early that it could only do damage to the gland. Such strenuous prostatic massage that it causes the patient great pain.

Prostatic massage under such conditions and of such a type as to favor extension to the seminal vesicles and epididymi.

Local treatments during an acute posterior urethritis.

Lack of the knowledge that the prostate becomes

infected in every case of posterior urethritis and does not recover spontaneously.

The use of too many forms of treatment rather than the adequate use of one. Failure properly to acquaint the patient with the dangers of the disease and the necessity for a strict mode of life.

As a means of preventing chronic gonorrhea Pelouse lays down the following points:

Don't do anything to devitalize this very delicate mucosa upon which you must rely for cure.

Don't injure it by the passage of solid bodies into it until you have reason to feel the gonococcus is gone.

Don't use chemicals that cause a greater reaction than the membrane can stand.

Don't trust too much treatment to the patient, for he has usually less skill than the most unskillful physicians.

Don't inject substances into the posterior urethra when only the anterior is infected.

Don't use a hydrostatic (or any other) pressure of more than three feet of water. The inflamed urethra cannot stand it without injury.

Don't give large doses of gonococcus vaccine in acute or any other gonococcal infection of the urogenital tract.

Don't carry out local treatments to the anterior urethra when the posterior urethra is acutely inflamed, for their possibilities for harm far outweigh the slight good they may do.

Don't think the bladder cannot be filled with three feet of water pressure, for it is generally easier to get the cut-off muscle to relax with slight than with great pressure. The latter insults it and throws it into spasm.

Don't forget that posterior urethritis means prostatitis, and that too early prostatic massage means permanent damage to the gland and probably abscess formation.

Don't forget that unskillful prostatic massage, heavy lifting, and sexual excitement or indulgence with a full bladder are the most common determining factors in epididymal involvement.

Don't fail to gain your patient's co-operation. Lack of it will render practically useless your most careful treatment.

Don't think a clear urine means cure, for the gonococcus loves to colonize and lie dormant. It can be stirred to activity by any type of roughness, and it had better be stirred than have some one else infected.

Don't forget that the utmost gentleness and judgment in the treatment of acute gonorrhea will obliterate chronic gonorrhea, and that your best ally is an untraumatized mucous membrane with good drainage.

TREATMENT OF VENEREAL DISEASE FROM THE STANDPOINT OF PREVENTION

Hennessey (*New Orleans Med. and Surg. Journal*) fully believes that the cloud of secrecy and the cloak of false modesty and prudery, beneath which venereal disease has been steadily ravaging the health of the nation, are fast disappearing in the light of the truth. Ignorance is largely the cause of the prevalence of venereal disease. Fifty-five per cent of young America is infected with a venereal disease before the age of twenty-three. Two hundred and fifty thousand die each year from the effects of venereal diseases, as against one hundred and sixty thousand from tuberculosis. Approximately one-fifth of all inmates of insane institutions are there because of syphilis; 30 per cent of all the blind in our institutions have been blinded by gonorrhea; eighty per cent of all the operations upon the female generative organs are due to venereal diseases. Loose training and the economic necessity of postponing marriage are to be considered as factors in increasing promiscuous sex relations, with its inevitable result. Education has proved to be the greatest factor in modifying the venereal disease rate. Its full benefits will come only when every educational agency is enlisted in the cause and the facts carried to every American home. The greatest safeguard against infection is chastity. Prophylaxis should be relegated to a position subordinate to educational training.

It seems strange, indeed that any physician of experience should not recognize that the habit of adverse criticism is a tree of unfortunate fruitage. The act of criticism is in itself an assumption of superiority, and invites at once the closest scrutiny of one's own deeds. And who among us has always obtained the results he had hoped to achieve? Who among us has not labored with diligence and with care, only to gather the melancholy fruits of failure? Is it not true that sometimes our best and most faithful service brings back to us the sting of ingratitude and the most unrelenting calumny?

Go search the records of our courts and you will find it to be the rule in all suits for malpractice, that the arrow of criticism has been aimed at some member of our profession whose skill and achievements have made him a shining mark among his fellows. You will find the arrow poisoned with the venom of envy that has been secreted and excreted by some pitiable perjurer who calls himself a doctor, and who has committed a thousand errors, many times blacker than the one with which he would seek to dim the lustre of his confrere.

THE PATHOLOGICAL VOMITING OF PREGNANCY

Kelly, in the *Virginia Medical Monthly* for March, 1926, says it may be of interest to some to state briefly the technique which he follows in this work. To make a solution for intravenous use the following method is recommended: Distilled, filtered, sterile water, the desired quantity; Lilly's 50 per-cent, 20-cc. ampoules of sterile glucose, the desired number, are thoroughly cleansed with alcohol, broken, and emptied into the water, prepared as above; then the desired amount of insulin is added (one unit for every two grammes of glucose). This mixture is then filtered through several thicknesses of sterile gauze in order to be sure there are no fine particles of glass in it, and, the temperature of the solution being correct, it is now ready for injection. The time consumed for one such

injection varies slightly with the amount of fluid used, but is usually one hour. The vein is never cut down upon; the needle, which should be rather small, is put through the skin into the vein in the usual way, the arm having been previously cleansed with iodine and alcohol.

By making a solution of the glucose-insulin mixture we have, of course, a solution in which there is a definite proportion of glucose to insulin in every drop of the solution as it flows into the vein. In other words, there is a better balance than when the glucose is put in the vein and the insulin given hypodermically. There is still another advantage: it is unnecessary to consume three or four hours to administer the glucose, as Thalheimer advises, though it should be given reasonably slowly. Also, the patient is not so exhausted by this method of procedure, and does not dread a repetition of the treatment as much as when it is so long drawn out and when repeated hypodermics of insulin are used. Furthermore, it seems that the results are even better when the insulin is put in the glucose solution.

His present method of treatment is to put the patient in a hospital, immediately give her 80 to 100 grammes of glucose by vein, and no food or water, by mouth, for twelve to twenty-four hours; at the end of this period allow dry food; no water for one hour before or for one and one-half hours after taking food, but abundant fluids at other times. If the results of this treatment are satisfactory, thus far, the patient is then given a very liberal carbohydrate diet, including candy if she so desires. The urine frequently shows sugar at the next voiding following the glucose injection, but it very soon disappears, and along with this the acetone and diacetic acid decrease or disappear. In fact, the results he gets in some of these cases are little short of miraculous. It may be necessary to use the glucose a second time, or even a third, in some cases, though one treatment is often sufficient to bring about a cure.

There are several important points in the treatment: First, give large doses; 80 to 100 grammes of glucose, as described above, is the amount he usually gives. He failed in one case, due, he believes, to small doses, though he carried her along for one month. There were, however, several obstacles in the way, over which, unfortunately, he had no control. He gave this patient glucose and insulin six times; she improved after each injection, especially after the first, but he was never able with small doses to free her urine of acetone or diacetic acid. He really believes large doses, with the use of luminal sodium, which was not given, would have done the work for her.

The three cases which he reports were very severe ones, one of which had been unable to retain any food and very little water for three weeks; she vomited practically not at all after the first injection.

He calls attention to one other remedy which he has found more helpful than anything else with the ordinary cases of vomiting and nausea. It is also very helpful with the severe ones. This is luminal sodium, given in doses of one to one and a half grains t. i. d., one hour before meals, and, if necessary, one tablet at bedtime. The patient is allowed no fluids for one hour before or for one hour and a half after eating. Plenty of fluid is allowed between these hours, and only dry food for meals. Surprisingly good results are obtained from this. In fact he has discarded corpus luteum, and many other remedies, since he began the use of luminal sodium. When this fails he sends the patient to the hospital for the glucose and insulin treatment.

In the treatment of the vomiting of pregnancy, he depends chiefly on two remedies, and those cases which he is unable to cure with luminal sodium he treats with glucose and insulin.

He is absolutely certain that abortions for the pathologic vomiting of pregnancy can be almost entirely prevented by the earnest application of this treatment.

He prepares the solution with the greatest care, using distilled water, well filtered through sterile gauze after preparing.

Occasionally there may be a chill and a temporary rise of temperature, but he has seen no harm come from this treatment. Faulty technique or impure solutions might result in serious trouble.

The glucose may be given in a 5- to 10- per-cent or even stronger solutions.

Use only a chemically pure glucose, preferably that put up in ampoules. He has heard of one death which was probably due to the use of an impure solution.

Much work has been done by Titus and others, and is still being done, in the use of glucose and insulin. There is some question as to the advantage of using insulin with the glucose, but it seems that if insulin aids in relieving acidosis and in carbohydrate metabolism in diabetics, it should also be of value in cases of this kind, where large amounts of glucose are put in the blood stream.

As a result of his experience with these cases, three indications stand out preeminently in importance in the order named: (1) Overcome dehydration; (2) supply carbohydrates; and (3) relieve nervousness and produce sleep. The first is done by using plenty of water with the glucose intravenously, by rectum and under the skin, if necessary. The second is done by large doses of glucose in the vein until vomiting ceases and then carbohydrates by mouth. The third is accomplished by the use of luminal sodium. This drug relieves the nervousness and produces the sleep which is so essential in these cases, and, until the stomach is able to retain this drug, he depends upon sodium bromide per rectum.—*Therapeutic Gazette.*

ORDERS IS ORDERS

A rookie sentry at Fort Snelling was walking a post that terminated at the bank of the Mississippi river. Two young second "looies" strolled to the water's edge and began to strip for a swim. The sentry stood watching them until one, having undressed, advanced to the water.

"Halt!" cried the sentry. "You can't swim here!"

"Then why didn't you tell us before we got our clothes off?" snapped a "looie."

"My orders don't say nothin' about undressing," replied the sentry, saluting.—*The Trouble Shooter.*

Book Reviews

AMERICAN ILLUSTRATED MEDICAL DICTIONARY. The terms used in Medicine, Surgery, Biology, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Medicine, and kindred branches. Edited by W. A. Newman Dorland, M. D., Member Committee on Nomenclature and Classification of Diseases of American Medical Association. Fourteenth Edition. Revised and Enlarged. Octavo of 1,388 pages, 319 illustrations, 107 in colors. Philadelphia and London: W. B. Saunders Company, 1927. Flexible binding. Plain, $7.00 net; Thumb Index, $7.50 net.

This edition has been thoroughly and extensively revised. Many definitions have been rewritten to bring the terminology in accord with the latest accepted ideas. Over two thousand new words have been added.

The illustrated features have been greatly enlarged in this edition. Over one hundred new cuts have been added. The volume is thoroughly up-to-date.

THE SURGICAL CLINICS OF NORTH AMERICA. August, 1927. Vol. 7, No. 4, The Brooklyn Hospital Number. Philadelphia and London: W. B. Saunders Company.

The contributors to this number are Doctors Alter, Bishop, Brinsmade, George Cochran, Jr., Crane, Davis, Field, Fisher, Given, Grace, Hunter, Ingraham, Jennings, Kramer, Lasher, Longmarino, Manard, Jr., Donald E. McKenna, Wm. F. McKenna, Morganthaler, Nerb, Patrie, Rathburn, Sherwood, William S. Smith, A. L. Smith, Tanner Taylor, Zimmerman.

EPIDEMIC ENCEPHALITIS. By Leo M. Crafts, M. D. Illustrated. Richard G. Badger. 1927.

In this volume the author has presented in ordered sequence and comprehensive grouping what has up to the present time been established as accepted knowledge on the character and behavior of Epidemic Encephalitis.

AMERICAN MEDICINE AND PUBLIC HEALTH. By Harry H. Moore. With an introduction by a committee of Five. New York and London: D. Appleton & Company. 1927. Price, $5.00.

This book aims to set forth in organized, logical form the chief facts now available in the present rapidly changing situation of the public health problem, and to present the economic, sociological and political aspects of those facts without which an understanding of them is impossible.

CULTIVATING THE CHILD'S APPETITE. By Charles Anderson Aldrich, M. D. New York: The Macmillan Company. 1927. Price $1.50.

A timely book for parents beset with the baffling problem of the child's refusal to eat.

In calling attention to this common affection and analyzing its nature the author is doing a grateful service to both laity and physicians.

HOW TO KILL A MEDICAL SOCIETY

"Don't come to the meetings. If you do come, come late. If the weather doesn't suit you, don't think of coming. If you do attend a meeting, find fault with the work of the officers and other members. Never accept office, as it is easier to criticize than to do things. Nevertheless, get sore if you are not appointed to a committee; but if you are, do not attend the committee meetings. If asked by the chairman to give your opinion regarding some important matter, tell him you have nothing to say. After the meeting, tell everyone how things ought to be done. Do nothing more than is absolutely necessary, but when other members roll up their sleeves and willingly and unselfishly use their ability to help matters along, howl that the organization is being run by a clique. Hold back your dues as long as possible, or don't pay them at all. Don't bother about getting new members."

THEY POURED WATER INSTEAD INTO THE BARREL

A local Scottish Society decided to hold an outing. The wives of the members arranged to bring various kinds of sandwiches, cold meats, cakes, etc., while the men folk agreed to buy the liquors.

Each member promised to bring a quart of Scotch and to pour it into an empty barrel, from which all were to draw off as much as they wished.

One of the members figuring to save the expense of buying a bottle of Scotch, filled an empty bottle with water and poured it into the barrel when no one was looking, thinking that with so much Scotch a quart of water wouldn't be detected. However, when the members took their first drink from the barrel they discovered they were drinking water, for every Scotchman had poured a bottle of water instead of Scotch into the barrel.

A "CATCHING" DISEASE

Patient (calling on family doctor)—"Doctor, my son has scarlet fever, and the worst part about it is that he admits he got it from kissing the housemaid."

Doctor (soothingly)—"Young people will do thoughtless things."

Patient—"But don't you see, doctor, to be plain with you, I've kissed the girl myself."

Doctor—"By jove, that's too bad."

Patient—"And to make matters worse, as I kissed my wife every morning and night, I'm afraid she will catch it."

Doctor (wildly)—"Good heavens! Then *I* will have it, too!"—*Medical Pickwick.*

HE COULDN'T PLAY AFTER THAT

Clinton: "Let's take in a round of golf."

Donaldson: "I dinna play, laddie."

Clinton: "What, you a Scot and don't know the game?"

Donaldson: "I dinna say that. Years ago I did."

Clinton: "What made you stop?"

Donaldson: "I lost my ball."

Society Proceedings

ADAMS COUNTY

The regular monthly meeting of the society was held October 10, 1927, at the Elks' Club, being called to order by the president at 8:15 p. m. Thirty-one members and seven guests were present.

Dr. W. W. Williams reported his observations at the Mayo Clinic during his visit there in August and September. Dr. M. J. Capron, Battle Creek Sanitarium, Battle Creek, Michigan, gave a very interesting talk on Pernicious Anemia, describing in detail the recent advances that have been made in the diagnosis and treatment of the disease. Discussion was by Drs. J. W. E. Bitter, C. W. Pfeiffer, L. H. A. Nickerson, F. W. Bowles, C. D. Center, W. F. Pearce and finally closed by Dr. Capron. Dr. Wells made a motion that Dr. Capron be given a rising vote of thanks for the excellent address that he gave. This was carried unanimously. Dr. E. B. Montgomery reported the meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, which he attended at Asheville, North Carolina, last month.

The Secretary made a motion that the minutes of the September meeting be approved as published in the Bulletin. Seconded and carried. The minutes of the October Council Meeting were read and approved. The applications for membership in the society of Drs. T. W. Rhodes and E. B. Miller were turned over to the Board of Censors. The President announced the appointment of Drs. Wells, McReynolds and Swanberg on the Educational Committee that had been approved at the October Council Meeting. The Secretary made a number of announcements and the meeting adjourned at 10:25 p. m.

HAROLD SWANBERG, M. D., Sec.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

PROGRAM

Joint Meeting Chicago Medical Society and the Chicago Tuberculosis Society, Oct. 26, 1927

Operative Collapse Therapy in the Treatment of Pulmonary Tuberculosis. Lantern Slides

RALPH C. MATSON,
Portland, Oregon.

This was the first meeting held in the auditorium of the new Medical and Dental Arts building.

FIFTH COUNCILOR DISTRICT

The second annual conference of the Fifth Councilor District of the Illinois State Medical Society was held in Springfield, October 12, at the Abraham Lincoln Hotel.

We were fortunate in having at this meeting the President of the State Society, Dr. G. Henry Mundt, and Dr. R. R. Ferguson, Chairman of the Educational Committee.

The following program was given:

Palm Room, Abraham Lincoln Hotel
10:00-12:00 M.

Presiding—Dr. William D. Chapman, Councilor, Fourth District.

Welcome Address—Dr. M. G. Owen, President, Sangamon County Medical Society.

Organizing a Live County Medical Society—Dr. W. R. Marshall, Secretary, DeWitt County Medical Society.

Discussion—Dr. J. M. Knochel, Lincoln; Dr. G. W. Ross, Watseka; Dr. C. W. Cargill, Mason City; Dr. H. W. Trigger, Loda.

The Importance of Having the Medical Men in a Community Well Organized—Dr. G. Henry Mundt, President, Illinois State Medical Society.

Discussion—Dr. Harold M. Camp, Secretary, Illinois State Medical Society; Dr. A. L. Brittin, Past President, Illinois State Medical Society; Dr. Frank Deneen, Bloomington; Dr. C. H. Dowsett, Watseka.

The Goiter Problem in Public Health—Dr. Edwin P. Sloan, Past President, Illinois State Medical Society.

Discussion—Dr. Herman H. Cole, Springfield; Dr. E. C. Gaffney, Lincoln; Dr. Walter G. Bain, Springfield.

Luncheon with Sangamon County Medical Society
Palm Room, Abraham Lincoln Hotel
12:15-2:00 P. M.

Presiding—Dr. Harold M. Camp, Secretary Illinois State Medical Society.

Round-Table Talks—By Officers of the State Society.

2:00-5:30 P. M.

Presiding—Dr. G. Henry Mundt, President, Illinois State Medical Society.

Breast-Feeding Campaign in McLean County—Dr. Ralph P. Peairs, Secretary, McLean County Medical Society.

Discussion—Dr. Elizabeth Ball, State Division Child Hygiene; Dr. N. D. Crawford, Pekin; Dr. H. C. Blankmeyer, Springfield.

Work of Education Committee—Dr. R. R. Ferguson, Chairman, Education Committee, Illinois State Medical Society.

Discussion—Dr. Wm. D. Chapman, Silvis; Dr. Isaac D. Rawlings, Director, State Department Public Health; Dr. C. S. Nelson, Springfield; Dr. S. T. Glasford, Pekin.

How the Doctor in Private Practice May Answer the Community's Call for a Child Hygiene Program—Dr. Grace S. Wightman, Chief, State Division of Child Hygiene.

Discussion—Dr. H. H. Tuttle, Superintendent of Health, Springfield; Dr. Wm. R. Grant, Easton; Dr. Irving Newcomer, Petersburg; Dr. Chas. H. Stubenrauch, Havana.

Policy to Be Pursued by a Medical Organization in Its Contacts with the General Public—Dr. George S. Edmonson, President, DeWitt County Medical Society.

Discussion—Dr. O. L. Zelle, Springfield; Dr. Horace Gibson, Sheldon; Dr. R. E. Valentine, Tallula; Dr. George A. Wash, Gibson City.

Meeting at the Centennial Bldg.
8:00 P. M.

Presiding—Hon. Francis G. Blair, Superintendent Public Instruction for Illinois.

Address, Hon. J. Emil Smith, Mayor of Springfield.

Address, "The Medical Profession and Public Health"—Dr. G. Henry Mundt, President, Illinois State Medical Society.

Address, "Work of the Educational Committee"—Dr. R. R. Ferguson, President, Chicago Medical Society.

That the subjects presented by the officers of the State Medical Society, as well as others on the program, were greatly appreciated was shown by the excellent discussions. It was unfortunate that the weather had been very disagreeable, which no doubt kept some of the men living in the remote counties in the district from attending.

Dr. Ferguson spoke before the Kiwanis Club, and also, with Dr. Mundt, before a lay meeting in the evening. The luncheon with the Sangamon County Medical Society at noon and the round-table talks with Dr. Camp, presiding and acting as toastmaster, were splendid features of the meeting. Dr. Mundt was introduced as the travelling president of the State Society. He has certainly proven himself a most sincere and capable head of the medical organization of the state.

Dr. Wm. D. Chapman, chairman of the Council, and Dr. I. H. Neece, Councilor of the Seventh District, were present. There were many nice things said about Dr. Chapman as a presiding officer and his discussions of the program. His definition of Public Health was quoted by Dr. Haven Emerson in his talk before the Mid-Day Luncheon Club the following day.

Dr. James H. Hutton of the Scientific Service Committee, and Miss McArthur, Secretary of the Education Committee, were present and assisted in every way in the success of the meeting. Dr. A. L. Brittin and Dr. E. P. Sloan, Past Presidents of the State Medicaf Society, were present and active in the discussions of the program.

The splendid co-operation of Dr. Isaac D. Rawlings, Director of the State Department of Public Health, and the members of his staff, Dr. Grace S. Wightman, Chief of Division of Child Hygiene, Dr. R. C. Cook and Dr. C .S. Nelson, in the presentation and discussion of papers, was appreciated by all those who attended the meeting.

The President of the Sangamon County Medical Society, Dr. M. G. Owen, and the Secretary, Dr. O. L. Zelle, with the assistance of the Public Relations Committee, Dr. Herman H. Cole, and Dr. Walter G. Bain, were active in the arrangements and success of the meeting.

The program was planned, and the talks and some of the papers, for the purpose of answering many of the questions and problems of the local county societies in their responsibility and contacts with the Parent-Teachers' Association, Woman's Clubs, vaccination, diphtheria prevention, and other health activities. Consequently, it was a disappointment that officers and members from a distance were unable to attend. It is hoped that we will be able to bring some of these features to the county societies that were not represented.

DR. S. E. MUNSON,
Councilor, Fifth District.

WILL-GRUNDY COUNTY

On Sept. 27 Dr. Alfred A. Straus of Michael Reese Hospital, Chicago, appeared before the Will-Grundy County Medical Society and gave an illustrated talk on the surgical treatment of gastric and duodenal ulcers. One week later Dr. Leon Block, also of Michael Reese, discussed the diagnosis and medical treatment of the same disturbances.

Dr. Henry Eugene Irish, associated professor of pediatrics of the University of Illinois Medical School, on October 19 delivered before the Will-Grundy County Medical Society a very instructive talk on "The Modern Treatment of Pneumonia in Children."

"The Diagnosis and Treatment of Lesions of the Tongue and Mouth" was the subject of an illustrated talk delivered before the Will-Grundy County Medical Society on Oct. 26 by Dr. Erwin Zeisler, Professor of Dermatology, Northwestern University.

LAWRENCE J. WILHELMI, *M. D.*,
Secretary Will-Grundy Medical Society.

Marriages

RENO ARTHUR AHLVIN, Joliet, Ill., to Miss Elsie Schlick of East St. Louis, September 28.

ISADORE PAT BRONSTEIN to Miss Sylvia C. Lome, both of Chicago, in August.

VINCENT THOMAS JAMES LENTH, Evanston, Ill., to Miss Frances Leonard of Jacksonville, August 29.

NINA S. LITVIN, Chicago, to Mr. Gladie T. Svenchansky of New York, September 15.

EUGENE C. PIETTE, Oak Park, Ill., to Miss Ruth Elizabeth Bowers of Chicago, September 17.

Personals

Dr. Clara Seippel Webster of Chicago and Tucson, Arizona, has accepted the position of Dean of Women of the University of Arizona. She will also act as Medical Adviser to Women. Recently she changed her surname from Widdowson to Webster.

Dr. Mary G. Schroeder has been appointed medical director of the Marquette Sanitarium, 3741 Sixty-sixth Place.

Dr. Edward W. Ryerson addressed the Chicago Orthopedic Club, October 14, on "Stabilizing Operations on the Foot."

Dr. Elmer E. Henderson addressed the Physicians' Fellowship Club, 2451 Kedzie Boulevard, October 21, on "Hospitals of Europe."

Dr. Ludvig Hektoen addressed the Massachusetts Medicolegal Society, Boston, October 6, on "Biologic Tests in Forensic Medicine."

Dr. Benjamin H. Hager, Mayo Clinic, Rochester, Minn., addressed the Chicago Urological Society, October 27, at the John B. Murphy Memorial, 50 East Erie Street, on "Urography."

At a joint meeting of the National Committee for the Prevention of Blindness and the Chicago Ophthalmological Society, October 14, Dr. Edward Jackson, Denver, spoke on "Prevention of Blindness from the Standpoint of the Ophthalmologist."

Dr. Roswell T. Pettit, Ottawa, Ill., addressed the Chicago Roentgen Society, October 13, on "Some Common Mistakes in the Making and Interpretation of Roentgen-Ray Films of the Chest in Pulmonary Tuberculosis."

Dr. Julius H. Hess opened the third season of medicohistorical lectures at the University of Illinois College of Medicine, October 19, with an illustrated talk on his recent visit to pediatric clinics in Norway, Sweden, Denmark and Holland.

The Chicago Gynecological Society and the Chicago Surgical Society held a joint meeting, October 14, at which Prof. S. A. Gammeltoft, University of Copenhagen, read a paper on "Conduct of Normal Labor" and Dr. Henry S. Plummer, Rochester, Minn., spoke on "Thyroid."

W. T. Bovie, Ph.D., has arrived in Chicago to take up his duties as professor of biophysics at Northwestern University Medical School. Dr. Bovie is a member of the Council on Physical Therapy of the American Medical Association and heretofore was associate professor of biophysics at Harvard University Medical School, Boston.

News Notes

—An addition to the Spalding School for Crippled Children to cost $1,000,000 is under construction; it will increase the enrolment to 1,500.

—Following the death from infantile paralysis of a pupil of the Dewey School, Evanston, the health commissioner, Dr. John W. H. Pollard, examined and quarantined about 100 children of the school and other members of their families in their homes for a period of two weeks.

—More than 1,000 applications were received for admission to the freshman class at the Northwestern University Medical School this fall, it is reported. One hundred and twenty-two were accepted, and of these only five had just the minimum two years of college preparation. Fifty-five are said to have had a college degree and one a Ph. D.

The Illinois Trudeau Society will meet, November 10, at Jacksonville, in conjunction with the Morgan County Medical Society; following a luncheon, a clinical program will be presented by Drs. Carl A. Hedblom and Edward A. Oliver, Chicago; George Gellhorn, St. Louis, and Hermon H. Cole, Springfield. At the dinner, the speaker will be Dr. William A. Evans, Chicago. Dr. Cecil M. Jack, Decatur, is president of the society.

—The Illinois Conference on Public Welfare and Study Courses was held at Joliet, October 17-21. Among the speakers were C. C. Carstens, New York, executive director, Child Welfare League of America; Dr. Alex S. Hershfield, Chicago, state alienist, and Dr. Daniel D. Coffey of the Chicago State Hospital. The American Association of Hospital Social Workers also met at Joliet.

—About 125 physicians attended a dinner and meeting of the Winnebago County Medical Society, Rockford, October 4. The addresses were given by Drs. William F. Braasch, Mayo Clinic, Rochester, Minn., on "Diagnosis and Treatment of Kidney Stone," and Dr. Charles S. McVicar, Mayo Clinic, Rochester, Minn., on "Clinical Application of Recent Studies of the Liver"; Drs. Thomas H. Culhane, Arthur J. Connell and John R. Porter, all of Rockford, presented a case of congenital hemolytic jaundice.

—In connection with the annual meeting of the National Safety Council in Chicago, September 26-30, a pageant of safety was held in Soldiers' Field, Grant Park, October 5. The mayor issued a proclamation designating this day for reflection on methods for the prevention of accidents, urging every municipal department, industry and civic organization to participate. There was a parade by the high school pupils who take military training, the city officials and

the safety patrols from the public and parochial schools. There were floats, a skilful driving demonstration by chauffeurs, a life saving exhibition by the police department, and a demonstration by the Chicago Fire Department. The object was to focus attention on the prevention of accidents.

—The state department of public health celebrated its 50th anniversary at Springfield, October 13-14. The presiding officers at the meeting included the president of the state medical society, Dr. G. Henry Mundt, Chicago; the chairman of the council of the state society, Dr. William Chapman; the state health officer, Dr. Isaac D. Rawlings, Springfield; Dr. Edwin P. Sloan, Bloomington, and Dr. Frank L. Rector, Chicago. The speakers included Drs. Haven Emerson, New York; William A. Evans, Roy R. Ferguson, Benjamin Goldberg and Samuel S. Winner, all of Chicago; Harry G. Irvine, Minneapolis; Edward Francis, U. S. Public Health Service, Washington, D. C., and John J. McShane and George D. Heath, Jr., Springfield. Volume 1 of a history of public health service in Illinois was distributed. Dr. Ferguson read a paper before the Annual Conference of Health Officers on "The Medical Society in Public Health Work."

—The formal opening of the University of Chicago clinics and new medical laboratories on the Midway took place October 31 and November 1. At the convocation in Leon Mandel Assembly Hall, the president of Yale University, James Rowland Angell, LL.D., gave the address on "Medicine and the University." Luncheon was served for the delegates at the Albert Merritt Billings Hospital. Monday afternoon, October 31, William Mansfield Clark, Ph.D., John Hopkins University School of Medicine, Baltimore, addressed the departments of physiology, physiologic chemistry and pharmacology, on "Reduction of Dyes by Biologic Systems and Some Remarks on the Mechanism"; Dr. Robert Gesell, University of Michigan, on "Regulation of Respiration," and Dr. Arthur S. Loevenhart, University of Wisconsin Medical School, on "Studies in Drug Tolerance with Special Reference to the Esters of Nitrous and Nitric Acids." The assembly in the departments of pathology, hygiene and bacteriology was addressed by Dr. Karl Landsteiner, Rockefeller Institute for Medical Research, New York, on "Recent Investigations on Antigens." At the department of medicine assembly, the Frank Billings Medical Clinic was dedicated, the presentation of the clinic and the endowment fund being made by the chairman of the citizens committee, Bernard E. Sunny. President Mason of the University of Chicago gave the response; Dr. Alfred E. Cohn, Rockefeller Institute for Medical Research gave an address on "Medicine and Science," and Donald D. Van Slyke, Sc.D., Rockefeller Institute for Medical Research, on "Urea Excretion in Nephritis." In the surgical clinic, Dr. Arthur Dean Bevan presented clinical demonstrations. Prof. I. Snapper, University of Amsterdam, spoke in Leon Mandel Assembly Hall on "Non-excretory Function of the Kidney" and Dr. Francis Carter Wood, director of cancer research, Columbia University, New York, on "Present Status of Cancer Research." Tuesday morning the Albert Merritt Billings Hospital and the Max Epstein Clinic were dedicated, Dr. Frank Billings, Chicago, making the presentation for the Billings family, and Max Epstein for the Epstein family. Rufus Cole, director, Hospital of the Rockefeller Institute for Medical Research, gave an address on "The Hospital and the Laboratory." Tuesday afternoon in the assembly room of the university clinics, Dr. William S. Thayer, professor emeritus of medicine, Johns Hopkins University School of Medicine, and President Elect of the American Medical Association, gave a clinical lecture on "Bacterial Endocarditis," and Dr. Evarts A. Graham, Washington University School of Medicine, St. Louis, on "Diseases of the Gall Bladder." The dedication of the hospital and clinics marks the opening of a program of expansion in medicine at the university which will extend over a number of years and include the construction of several additional hospitals.

Deaths

HERBERT HUSKISSON CORNFORTH, DeKalb; Baltimore Medical College, 1909; a Fellow A. M. A.; who served in the medical corps U. S. A. in the world war and was a delegate from DeKalb post of American Legion at the convention in Paris, is reported to have died in Germany recently while on a tour of Europe.

PERRY DALE GAUNT, Warsaw; Hering Medical College, Chicago, 1906; a member of Illinois State Medical Society; district health officer; aged 45; died Oct. 7, in St. Joseph's hospital in Keokuk, Iowa, from appendicitis.

WILLIAM A. SKEEL, Kampsville, Ill.; St. Louis Col-

lege of Physicians and Surgeons, 1891; aged 61; died September 15.

CLARENCE EDWARD BLOOMBERG, Rock Island, Ill.; University of Minnesota Medical School, Minneapolis, 1927; aged 29; died, September 7, of pulmonary tuberculosis.

CHARLES FRANKLIN MARLIN BUTTERFIELD, Rock City, Ill.; Chicago College of Medicine and Surgery, 1909; a Fellow, A. M. A.; served during the World War; aged 47; died, September 8, of angina pectoris.

LENA HATFIELD, Chicago; University of Illinois College of Medicine, Chicago, 1906; aged 52; died, August 28, of cerebral hemorrhage.

MERRITT OWEN HOOVER, Chicago; Jenner Medical College, Chicago, 1905; a Fellow, A. M. A.; formerly on the staff of St. Elizabeth's Hospital, where he died, September 30, of atrophic cirrhosis of the liver, aged 55.

KATHERINE E. JAMES, Rockford, Ill.; Hahnemann Medical College and Hospital, Chicago, 1895; aged 58; died, August 18, at Carroga Lake, N. Y., of carcinoma of the rectum.

FELIX JOHN LANGENHORST, Chicago; State University of Iowa College of Medicine, Iowa City, 1895; a Fellow A. M. A.; University of Pennsylvania School of Medicine, Philadelphia, 1897; aged 59; died, August 20, of carcinoma of the pancreas.

BENJAMIN F. LOUNSBURY, Chicago; Northwestern University Medical School, Chicago, 1907; a Fellow A. M. A.; associate professor of clinical surgery, University of Illinois College of Medicine; chief of staff of Washington Boulevard Hospital; aged 51; was killed, October 21, in an automobile accident.

GOMER EDWARD METHERELL, Rockford, Ill.; Bennett Medical College, Chicago, 1911; a Fellow A. M. A.; aged 37; died, September 10, at the Johns Hopkins Hospital, Baltimore, of injuries received when the automobile in which he was driving was struck by a train some months ago.

EUGENE FAY NAYLOR, Springfield, Ill.; Rush Medical College, Chicago, 1920; member of the Illinois State Medical Society; served during the World War; aged 34; died suddenly, August 27, in Chicago, of heart dis-

JOHN TRUMBULL REEVES, Vandalia, Ill.; Keokuk (Iowa) Medical College, 1891; aged 67; died, September 13, of carcinoma of the face.

FRIEDRICH E. REICHARDT, Chicago; Chicago Homeopathic Medical College, 1896; formerly medical director of the Chicago Sanitarium; aged 69; died, September 27, of skull fracture, received when a rock was hurled through the window of a street car in which he was riding, presumably by a speeding train.

ROBERT HINEMAN H. SMITH, Eureka, Ill.; Kansas Medical College, Topeka, 1905; a Fellow A. M. A.; past president of the Mercer County (Ill.) Medical Society; on the staff of the Eureka Hospital; aged 47; died, August 18, of heart disease.

CHARLES WELLINGTON DURST, St. Elmo, Ill.; University of Wooster, 1879; member of the Illinois State Medical Society; aged 74; died, September 21.

GUSTAF ADOLPH GOETSCH, Chicago; Rush Medical College, 1898; formerly a druggist; professor of dermatology, Chicago Hospital College of Medicine; a Fellow, A. M. A.; aged 58; died September 28, of heart disease.

CHARLES P. GORE, Lawrenceville, Ill.; College of Physicians and Surgeons, Chicago, 1905; aged 47; died, October 16, after a year's sickness from leukemia.

ROBERT A. HANKINS, Carlinville, Ill.; Eclectic Medical College of Pennsylvania, Philadelphia, 1871; formerly mayor of Carlinville; died at the home of his daughter in Dallas, Texas, September 4; aged 79.

JOSEPH RALSTON HOLLOWBUSH, Rock Island, Ill.; Washington University Medical Department, St. Louis, 1880; a Fellow, American College of Surgeons; city physician; aged 67; died October 16. Dr. Hollowbush was chief of surgical service at Camp Sherman, Ohio, in the World War.

ELMER L. KELSO, Paxton, Ill.; Northwestern University Medical School, Chicago, 1883; aged 66; died from heart disease, October 7. He succeeded his father, Dr. H. A. Kelso, in practice at Paxton, 44 years ago. His son, Dr. Leon W. Kelso, is in practice in Carlinville.

MARY CAROLINE KNIGHT, Yorkville, Ill.; Northwestern University Woman's Medical School, 1882; a practitioner in Aurora for many years; aged 78; died at her home, October 12.

ROBERT I. LAW, Galesburg, Ill.; College of Physicians and Surgeons, Keokuk, 1871; a veteran of the Civil War; aged 82; died in St. Mary's Hospital, September 25.

MILLER D. MACHIN, Macomb, Ill.; Keokuk Medical College, 1896; member of the Illinois State Medical Society; aged 74; died, October 5, of heart disease.

ENOS E. PALMER, Ottawa, Ill.; Northwestern University Medical School, 1900; city health officer; member of the Illinois State Medical Society; aged 61; died suddenly in his office, of heart disease, shortly after performing an operation in Ryburn-King Hospital, September 29.

JOHN LUTHER POLK, Champaign, Ill.; Jefferson Medical College, Philadelphia, 1868; a former member of Illinois State Medical Society; retired after many years' practice in Arcola; Illinois Central Railroad surgeon; a relative of President Polk; aged 86; died September 17. Dr. and Mrs. Polk built the Emmanuel Memorial Episcopal Church of Champaign in memory of three sons.

JAMES W. SANDERS, Decatur, Ill.; Northwestern University Medical School, Chicago, 1889; a former member of Illinois State Medical Society; a practitioner in Decatur 34 years; chairman several years of Democratic county central committee; aged 74; died in Decatur and Macon County Hospital, September 30, from a malignant growth.

JOHN THOMAS WALSH, Cairo, Ill.; St. Louis College of Physicians and Surgeons, 1896; member of the Illinois State Medical Society; aged 56; died, September 21, of Chronic nephritis.

ber, 1927

Medical
f derma-
e; a Fel-
of heart

llege of
aged 47;
leukemia.
ctic Med-
871; for-
ne of his
l 79.
and, Ill.;
St. Louis,
ons; city
llowbush
an, Ohio,

n Univer-
died from
ather, Dr.
ears ago.
n Carlin-

; North-
, 1882; a
78; died

Physicians
the Civil
Septem-

Medical
Medical
sease.
tern Uni-
er; mem-
l 61; died
rtly after
Hospital,

rson Med-
ember of
any years'
surgeon;
September
Memorial
of three

thwestern
a former
ractitioner
of Demo-
ed in De-
30, from

is College
f the Illi-
September